THE RUBBER AGE AND TIRE NEWS

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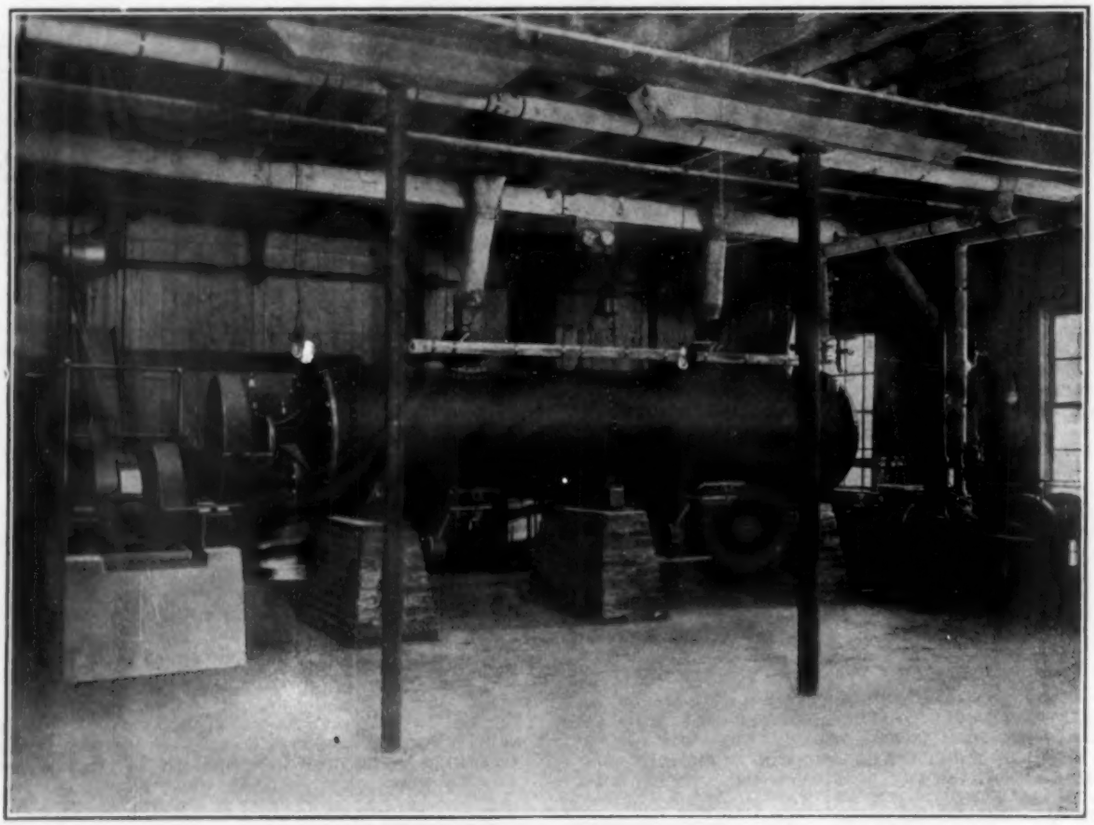

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THE RUBBER AGE AND TIRE NEWS

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Detection and Determination of Glue in Rubber Goods*

By S. W. Epstein, *Assistant Chemist* and W. E. Lange, *Laboratory Assistant, Bureau of Standards*

Glue is one of the latest additions to the long list of materials which have found application in rubber compounding. Its use has been attended with such striking success that it is becoming more and more prevalent in rubber stocks. As a consequence, the rubber analyst has another organic constituent to contend with in the determination of rubber hydrocarbon by difference. In order to be able to rely upon the figure for rubber hydrocarbon in a rubber "mixing," it is necessary to know whether or not glue is present, and when it is the quantity must be determined.

The use of glue in rubber is such a comparatively recent thing that up to the present its detection and determination have received little attention. After one has found out that it is impossible to extract the glue from a cured rubber stock by means of boiling water, the problem of finding a satisfactory method takes on a formidable aspect.

In our opinion, the problem presented two angles from which it could be attacked, namely: 1. By dissolving away the rubber and leaving the glue unchanged so that it could be dissolved in water and the glue determined by the weight of the water extract. 2. By determining the nitrogen content and calculating this to glue by means of the factor 5.56.

Feeling that a Kjeldahl determination was rather long for ordinary laboratory practice, we undertook to dissolve the rubber and to attempt to get the glue in the residue.

We found that the nitrosite and bromine methods of converting rubber into a soluble derivative could not be used, since the glue seemed to be acted upon. The residue, which was left after the removal of the rubber compounds, when extracted and digested with hot water gave extracts which contained less than 50 per cent of the total glue present; in addition, this water solution would give none of the tests which are used to detect the presence of glue.

We next directed our attention to the rubber solvents, especially to those which would dissolve rubber at comparatively low temperatures, since a high boiling solvent decomposes the glue and is therefore inapplicable. After considerable experimentation it was found that cresol seemed to be satisfactory for the purpose. Rubber can be dissolved in it, and the resulting solution after it has been diluted with petroleum ether can be filtered with ease. When glue is treated with cresol it dissolves very readily, but is precipitated in large part from this solution on the addition of petroleum ether. Experiments showed that on the average about 70 per cent of the glue could be precipitated from its cresol solution. The precipitation, therefore, could not be used as a quantitative procedure for a glue determination. However, this precipitate settled out very well and dissolved readily in water to give a solution which answered all the tests for glue. The procedure could be used as the basis of a qualitative test for glue in rubber "mixings."

Qualitative Method

About 0.5 gram of the rubber sample to be tested for the presence of glue is digested in 25 cc. of freshly distilled cresol (B. P. 195° C.) in a tall beaker for about 16 hours at 120° C. This digestion is conveniently carried out by placing the beakers in a properly regulated Freas oven and allowing them to remain there over night. The cresol solution is allowed to cool and 250 cc. of petroleum ether is added slowly with constant agitation. When this solution has settled and the supernatant liquid is clear, it is filtered through a gooch crucible, using gentle suction. The beaker and contents and crucible are washed thoroughly with petroleum ether, then with hot benzol. The pad is removed from the crucible, placed inside of the beaker and digested for several minutes with boiling water. The solution is filtered through a folded filter paper and evaporated to a volume not to exceed 150 cc. After it has cooled it is poured very slowly into a 5 per cent solution of pure tannic acid. In the presence of glue a cloudiness will appear at first, and finally a precipitate as more of the glue solution is added. Large percentages of glue give heavy, curdy precipitates, while small quantities give decided cloudiness. In the absence of glue no permanent precipitate or cloudiness will appear in the tannic acid solution as the liquid is added to it.

In order to test the reliability of this qualitative procedure in detecting varying quantities of glue, mixings were made up which contained from 0.9 per cent to 10.0 per cent of glue, the balance of the compound being rubber (40 per cent), zinc oxide, magnesium axide, gas black, mineral rubber and sulphur. They were run through the above procedure with the following results:

Percentage of glue	Appearance of the solution on addition to tannic acid
0.0	Solution remains perfectly clear. No cloudiness.
0.9	Distinctly cloudy.
1.7	Cloudiness much densed than the above.
2.6	Cloudiness almost opaque. Precipitate.
3.5	Absolutely opaque. Precipitate.
4.3	Fairly heavy precipitate.
6.3	Heavy precipitate.
8.0	Very heavy precipitate.
10.0	Very heavy precipitate which showed its curdy character very plainly.

The observations given above demonstrate conclusively that even the smallest practicable amount of glue can readily be detected by means of the procedure recommended here.

* Published by Permission of the Director of the Bureau of Standards, Washington. D. C.

Many experiments were carried out in order to ascertain whether ingredients other than glue would dissolve in water and precipitate the tannic acid solution and in this way be mistaken for glue. It was found that magnesium oxide and calcium oxide dissolve to a considerable extent in hot water after they have been treated with cresol and the water solution that is obtained precipitates tannic acid when the reagent is not in excess. However, these precipitates are readily soluble in excess of tannic acid, while the glue-tannate precipitate is insoluble. Therefore it was recommended in the method given above that the solution to be tested for glue be added to the 5 per cent tannic acid solution. In this way the magnesium and calcium precipitates will be dissolved immediately as they appear and will become permanent only when a considerable quantity of their solutions has been added. In this way there will be no chance of mistaking them for glue, since the glue precipitate will appear immediately and will be permanent, even when only a small quantity of its solution has been added. We have been unable to find anything else which would be present in this solution and would give a permanent precipitate when added to tannic acid. There is therefore no danger of misinterpreting the tannic acid precipitate; when it is obtained the presence of glue in the rubber mixing cannot be questioned.

Quantitative Method

However, since the method is not quantitative after the presence of glue has been proved, its amount must be determined. The only means we have found by which this can be done is to determine the nitrogen by the Kjeldahl procedure and to calculate the amount of glue from it. This was found to be satisfactory, and results were obtained which were usually 0.1 per cent to 0.2 per cent higher than the true value. The method is practically the same as that followed in most laboratories. It is as follows:

Extract a 2-gm. sample with acetone for 6 hours, and then with chloroform for 3 hours and dry. Transfer the sample to a 750-cc. Kjeldahl flask. Add 25 to 30 cc. of concentrated sulphuric acid, 10-12 grams of sodium sulphate, and about 1 gram of copper sulphate. Place the flask on the Kjeldahl digesting apparatus, and heat gently until the first vigorous frothing ceases, then raise the heat gradually until the liquid boils. Continue the boiling until the solution becomes clear. Allow the flask to cool to 40°-60° (if allowed to become thoroughly cold the solution solidifies); dilute carefully with 150 cc. of water; allow to cool. Add 100 cc. of 50 per cent NaOH solution, pouring it carefully down the side of the flask so that it does not mix immediately with the acid solution. Add about 1 gram of granulated zinc to prevent bumping, and a piece of paraffin the size of a pea to diminish frothing. Connect the flask quickly with a condenser, the delivery tube of which dips into a 500-cc. Erlenmeyer flask, containing 50 cc. of N/10 sulphuric acid, diluted to about 100 cc. Shake up the Kjeldahl flask and heat gently at first, increasing the flame as the danger of foaming over diminishes, finally boiling briskly until about one-half of the liquid has passed over into the receiver. Add 1 cc. of methyl red solution, and titrate the excess acid by means of standard NaOH solution.

Calculation:

$$100\ (\text{cc. } H_2SO_4 \times \text{normality} - \text{cc. NaOH} \times \text{normality}).$$
$$(0.014) \times (5.56) = \text{Weight of sample}$$

When light-gravity stocks are analyzed as above, inexperienced manipulators may not find glue when it is present. Such stocks float on the surface of the acid and allow the glue to be driven off by the heat before the nitrogen in it has been converted into ammonium sulphate, and therefore no ammonia will be obtained. This difficulty can be overcome by constant agitation of the flask so that the rubber is kept moistened with acid until it is attacked. This laboratory has found it very convenient to add a small quantity of bromine to the rubber, which makes a brominated mass which sticks to the bottom when the acid is poured over it. There is therefore no danger of driving off any of the glue, and the constant agitation and attention which are necessary otherwise can safely be dispensed with.

Conclusions

1. A method is presented here which will detect as little as 0.9 per cent of glue in a rubber "mixing." It has been found, by experiment, that no substance other than glue will answer to this test when it is carried out as directed. The procedure is reliable and convenient.

2. When glue is present in a rubber sample its quantity is arrived at by determining the nitrogen content by means of the Kjeldahl procedure and calculating this to glue. We have been able to find no other satisfactory quantitative method which would give the correct percentage of glue.

Egyptian Cotton Crop Reports

Reports recently received from Alexandria confirm earlier predictions that the acreage under cotton for the current year would be considerably in excess of the figures for 1918. The following figures show the acreage under cotton in Egypt for the last three years:

	1919 Feddans	1918 Feddans	1917 Feddans
Lower Egypt	1,219,303	1,023,888	1,293,787
Upper Egypt	354,359	291,684	383,521
	1,573,662	1,315,572	1,677,308

(A feddan equals 1.04 acres.)

The following figures show the acreage planted for the different varieties:

	1919 Feddans	P. C.	1918 Feddans	P. C.	1917 Feddans	P. C.
Sakellarides.	1,146,443	72.85	952,480	72.40	1,133,180	67.56
Ashmouni .	334,160	21.23	273,936	20.82	361,875	21.58
Afifi, Assili, Nubari...	79,759	5.07	78,565	5.97	178,019	10.37
Abbassi, Joanovich, Various.....	13,300	.85	10,591	.81	8,234	.49
	1,573,662	100.00	1,315,572	100.00	1,677,308	100.00

The Alexandria General Produce Association on September 3 issued a summary of information relative to the condition of the cotton crop. This in brief stated that in Lower Egypt favorable weather had prevailed up to August 20, and that this had contributed greatly in maturing the pods. During the last ten days of the month the nights were cool and damp, while light fogs occurred in a few localities. The boll worm and pink boll worm have caused considerable damage, the number of pods attacked varying, according to locality, from ten to twenty-five per cent. Prospects for the first picking are said to be fairly favorable, and this should have taken place between September 15 and 20, or about ten days later than is customary.

In Upper Egypt and Fayoum the weather is reported as having been generally favorable to the cotton plants. Water has been sufficient, and the damage caused by the pink boll worm has been of little importance. The first picking began about August 15 and is giving satisfactory results both as regards quantity and quality.

Generally speaking, the weather has been favorable while the water supply has been ample for all needs. The cotton worm attack has affected the crop in Beheira and Daqahliya, especially where precautions have been neglected. An examination of green bolls continues to show no increase in the attack of the pink boll worm, which is considerably less than during the corresponding periods of the last three years.

Buying Cotton for Future Delivery*

By Randall M. Durfee

Whoever has a commodity to sell can sell that commodity only when some one wants to buy; often he must make the terms so favorable as to induce the purchase; the purchaser generally dictates the conditions of sale regarding time of delivery and method of payment. Of course there are exceptions to this general rule. This happened recently when the demand for most commodities being so much greater than the supply, the seller reversed the general rule and practically dictated to the purchaser under what conditions he would sell. The purchaser was willing to meet these conditions in order that he might secure the materials wanted. This rule applies especially in the textile world and the handlers of cotton textiles have had to conform to same. Under these general conditions cotton manufacturers dispose of their finished product. While the price must be satisfactory to the manufacturer he must make the deliveries satisfactory to the purchaser.

PERFECT FIELD OF EGYPTIAN COTTON

In times past English merchants have sold for deliveries extending over a period of three years. They have been obliged to buy their raw materials in order to cover their contracts for this period or to protect themselves by purchasing futures on one of the exchanges. These extended deliveries are the exception, and not the rule; yet it frequently happens that contracts of cotton textiles for deliveries extending over a period of twelve months are made either at a fixed price or at value. When sales are made at a fixed price the manufacturer must in some way protect himself with the raw material at the time of sale. The value of cotton cloth depending more or less on the price of cotton, the manufacturer need not protect himself at the time of sale against contract sold at value, but can wait until the time of delivery.

Cotton—The Variable

Cotton is the raw material representing from 40 per cent to 70 per cent of the value of the finished product. The other items of expense in manufacturing such as labor, repairs, supplies, depreciation, interest and taxes are more or less stable and can be fairly accurately estimated in figuring costs over a period of at least six months. With variations in the price of cotton of ten dollars a bale in a single day the manufacturer must always be protected in his supply whenever he makes a sale; he must have this protection on the very day he sells his finished product. This protection is possible either by the purchase of the actual cotton or by the purchase of futures on one of the exchanges, presumably the New York Cotton Exchange. On sale for practically spot or nearby deliveries for which ordinary staple cotton of medium grade is required, he can almost always cover his requirement by purchasing either spot cotton or cotton for immediate delivery. The establishment of licensed warehouses at convenient centres of production, as well as of consumption, will allow not only the producer to sell against these sales but the manufacturer to buy, and so both will be the gainers.

The manufacturer cannot always purchase the raw material covering his sales in this way. On his sales for extended deliveries and sales of merchandise requiring either special grades or special staples obtainable only at certain seasons he must either buy his cotton for future delivery at a stated price, or he must always have on hand a stock of the special grades and staples covering his probable requirements for the season. He must either stand open as to price on his purchases of special grades and special staples which are not always obtainable, or must protect himself by selling futures against his stock, the product of which has not been sold, by buying in his futures to cover his sales of the finished product when made. A few years ago the manufacturer could practically protect himself in this way on all his purchases of raw material, including American staple cotton; today, so far as staples are concerned, he must either try to sell his yearly product when he buys his staples or remain unprotected, and so take chances in making a favorable sale later in the season. With the very radical fluctuations in the New York future markets of recent years there is a question in the minds of some manufacturers as to whether the man who stands open on his purchases is not in the long run fully as well protected as he who sells futures against his purchases. The methods of buying cotton for future delivery and of protecting purchases of raw cotton not sold against, vary in degree but are nevertheless practically the same, both requiring the use of the future market.

Buying for Future Delivery

In buying cotton for future delivery the manufacturer has the choice of either buying futures in the New York market or making his purchase direct through a broker for such deliveries as he needs. Such purchases are to cover sales of his finished product and accordingly are at a fixed price known at the time of the purchase, whether futures are bought or a direct sale is made. In case a purchase is made, to have the desired quality and against which no product is sold, the price is based at so many points on or off a distant

*Speech Delivered at recent Cotton Conference in New Orleans.

month, the price of the cotton being fixed when the product is sold and the futures called. The manufacturer may also buy such cotton at a fixed price and sell futures against same, calling these futures and pricing his cotton when he sells his goods. If the purchase at a fixed price is made through a broker, the manufacturer naturally presumes that the broker will protect himself either by the purchase of the actual cotton with the intention of selling and replacing until the time comes for the delivery against the original sale, or by buying futures in the open market and selling same when the time for delivery arrives and the actual cotton is bought. The broker may purchase cotton through his correspondent in the South who, in turn, contracts with the farmer or his agent for delivery of so many specified bales of a specified quality, of his growing crop. In purchasing through a broker in which only a sale note passes, the manufacturer does not actually know whether his purchases are protected, and is more or less taking chances in so buying his raw material.

In my personal experience a manufacturer bought a contract for future delivery which was placed through a Southern correspondent with an A 1 rating in the commercial agencies. This correspondent bought part of the contract through the future market and part by direct agreement with the farmer for his crop. The broker had no means of knowing the volume of the business which his correspondent had on his books nor what protection he had taken in this particular transaction. Futures were bought against part of the sales but the market made such radical changes that these showed a large loss when the actual cotton was bought, owing to the difference between spot cotton and the future market. The farmer who contracted to deliver at a very much lower price than the market at the time of delivery, either had a crop failure or found it expedient to sell elsewhere at a higher price and there was no apparent way to make him settle for the loss which the southern correspondent suffered on account of this non-delivery. As a result the party from whom the broker made his purchase was forced to make a settlement and give his notes to his various creditors. The principal in question is now holding a note for over fifteen thousand dollars which is merely a "scrap of paper"; not one cent of interest has ever been paid up to date on same. Although this may be an isolated case it actually occurred and will occur again unless proper precautions are taken.

Mutual Protection

In transactions of this kind both buyer and seller should be protected; the transaction should be a purely business one, and in case of an advance in the market the seller should advance the proper margin to the buyer, who should do the same if the market declined. These remittances could either be made in New York exchange or by the use of acceptances arranged to mature at the time the actual cotton was to be delivered. The latter method has been used quite extensively by some of the leading dealers in raw cotton with very great satisfaction to both buyer and seller. In my opinion from the standpoint of the broker as well as that of the manufacturer, transactions involving the future delivery of cotton should be made in the way just described; the purchases should be put through responsible brokers whose business it is to see that proper precautions are taken to safeguard all interests. The manufacturer should be just as willing to advance the proper margins when the market is against him as to demand the same margins when the market is in his favor. The volume of transactions in raw cotton calling for protection is of very much larger amount than is generally thought. In protecting these transactions so far as my own experience goes, the manufacturer has always paid the full amount, but the broker has frequently been put to considerable expense in advancing margins on his own account, as the manufacturer has either refused to meet these margins or the broker, fearing competition, has not deemed it expedient to ask for same. In such instances the manufacturer should certainly pay the interest charges, but frequently he is not of this opinion. It is to the interest of both buyer and seller that all transactions calling for the future delivery of cotton should be safeguarded in every possible way.

In buying cotton for future delivery on which the price has not been fixed but only the basis given at the time contract was made, the final price may be either at the buyer's or the seller's call. Most transactions of basis cotton are made with the price left to the buyer's call, as generally the buyer is more interested in pricing his cotton than the seller. Many dealers who are in the habit of purchasing cotton for future delivery at a basis price have found it very advantageous to them to buy such cotton at the seller's option of fixing the price, with the understanding that the price should be fixed by the seller before the cotton is shipped. This method, in a way, safeguards the transaction, as the seller is only responsible before the cotton is shipped, and after the cotton is shipped the buyer is in a position to safeguard his own interests. Sellers prefer this method, as they are not called upon to furnish margins when the market is against them, and many buyers prefer it as the handling of the futures is entirely under their control.

Value of Warehouses

The establishment of the chain of warehouses at strategic points, both in the South and North, suggested some months ago by the Cotton Buying Committee of The National Association of Cotton Manufacturers, will be of incalculable value in safeguarding the interests of both buyer and seller in such transactions calling for delivery of cotton at stated periods over a number of months. The suggestion of these warehouses has become a reality with the incorporation of the Union Cotton Warehouse Organization Corporation.

Where cotton sold is held in store with ownership unchanged, although part payment has been advanced, arrangements may easily be made with the warehouse man, advising him of the money advanced by the purchaser, that the cotton in store was for his account, and that when shipped it was to be shipped for his account. These details may seem unimportant, but in times past the handling of cotton accounts has not been on a business basis, and it is essential that improvements be made in the financial side as well as on the physical protection of this great American staple. Buying future contracts in the market and protecting purchases of special grades of cotton available only at certain seasons and against which no sales of finished goods have been made can be included in the same class, although in some respects quite dissimilar. The manufacturer who has sold his product ahead and has bought futures instead of actual cotton, covering the same, takes the chance of the basis of such cotton as he needs, changing when the time comes for him to sell his futures and buy in the actual cotton; this basis may be higher or lower at the time of purchase than it was when he sold his goods. Of course, if his product was always sold in the same way the law of averages would probably even up prices, but generally spinners do not have the same inquiries repeated year after year, so they cannot depend on the law of averages. They must take their chance, in buying futures to cover their contract, that the basis will be about the same or lower, and if they have sold goods at a close margin their judgment as to the basis may mean a profit or loss.

Should Limit Speculation

During the past few years this method of protecting sales cannot be called good merchandising, as it involves more or less speculation. In the season just closed the basis on certain grades has differed over twenty dollars a bale, and one can readily see how a contract apparently showing a good profit might in the end show a very large loss. There is no uncer-

tainty in the case of protecting purchases of special qualities with sales of future contracts, as the spinners can figure accurately the price at which he can take his cotton when the inquiry comes to him for his goods. In my opinion this is the only absolutely safe way under present conditions for the spinner to use the future market; the element of risk is almost negligible. With the elimination of several of the undesirable grades formerly deliverable on contract, a spinner who is in a position to use ordinary staple can buy contracts and accept the delivery of same, using the cotton so delivered to produce the goods sold. Of course, he takes chance both as to grade and staple; cotton unsuitable in grade or staple may be delivered, in which case he will have to replace in the open market with cotton suitable for his needs. By paying a certain premium to the broker who handles his account, a spinner can arrange to accept only the grades suitable, and the broker through whom the transaction is placed arranges to either sell the undesirable cotton elsewhere or to re-deliver same on the exchange. To spinners who can avail themselves of such cotton, the buying of futures to cover extended deliveries is most satisfactory. The whole question of buying cotton for future delivery is so closely related to the conduct of the exchanges that any paper on this subject should devote at least a paragraph to the methods of the exchange. When futures decline the planter wants the exchange investigated; when futures advance the spinner has his grievance, alleging that speculation is putting the market up, not the law of supply and demand. Opinions vary, and many spinners as well as producers of raw cotton think that there should be a change in the conduct of business in cotton futures. There will be speculation so long as there are exchanges, but an exchange dealing with such necessities of life as cotton should limit speculation as much as possible. Today speculation and not legitimate business largely controls the cotton exchange.

I have frequently heard persons representing all branches of the cotton world almost demand in highly speculative periods that the cotton exchange be closed. Every great business can be improved and the cotton exchange is no exception, and yet without the medium of the cotton exchange the cotton interests would be in the same position as a ship without a rudder in a storm at sea. The exchange, the only protection to the grower and the manufacturer, is the clearing house of the textile world. Without such protection the entire cotton interests would become one huge gamble and the present speculation, when compared to this condition, would be like comparing a "piker" to a large operator.

Vegetable Coloring Matter for Rubber

By D. Repony

Generally speaking rubber goods are colored by substances of mineral origin. Some hold their color during and after vulcanization while others become decomposed under the influence of heat or other causes. Consequently it is of interest to know how coloring matter originated by plant life will behave when mixed into rubber compounds. Along these lines the following principal colors have been tried: chlorophyll for green; alkanin for red; indigo for blue.

Experiments wtih chlorophyll green: Chlorophyll is the coloring matter from plant leaves and is on the market in three different forms—water soluble, used for coloring liquors, confectionery, etc.; alcoholic soluble, used for coloring alcoholic liquors, and that which is soluble in oils and fats, used for coloring oils, fats, soaps, ointments, etc.

Chlorophyll possesses the property of coloring green without florescence. The chlorophyll products on the market are of slightly alkaline reaction with small quantities of potassium carbonate to prevent their decomposition.

The following rubber compounds have been mixed:

34 oz. pale crepe rubber
10 oz. Chlorosulfide fatty substitute
72 oz. Lithopone
2 oz. magnesia carbonate
8 oz. sulphur
6 oz. chlorophyll Merck soluble in oils

Although this compound contained only four per cent of chlorophyll it was a light grass green color and after being vulcanized in the press for thirty minutes at 290 deg. F. the color remained unchanged. The sample is at present over three years of age and the green color still remains unchanged. The form of chlorophyll which is soluble in fats costs about $2.00 per pound, the high cost being probably due to the fact that the Merck product is of great purity. It should, however, be possible to produce a considerably less expensive chlorophyll for coloring rubber.

An interesting experiment was accomplished by taking some of the leaves of Boston ivy, which covers the walls of our laboratory, and mixing them into the rubber compound. The result was that the compound was colored brownish-green and held the same shade during and after vulcanization. The brownish tint was due to the vegetable extract present in the leaves while the cellulose from the same source imparted a peculiar and somewhat fibrous appearance to the rubber.

Alkanin

Alkanin is the red coloring matter found in the roots of alkanet (anchusa tinctioria). Alkanin is soluble in alcohol, ether, carbon disulphide, benzol and oils. The extract of alkanet is of dark red color. Any substance colored by it when slightly acid is red, while slightly alkaline substances turn blue. Mixing three per cent of alkanet extract in a compound similar to that used in the test for chlorophyll caused the rubber compound to assume a blue shade although the compound contained no trace of acid.

This rubber compound when vulcanized at various temperatures up to 285 deg. F. retained the blue color but when vulcanized at a heat of over 290 deg. F. the blue color changed to greenish gray which again changed to blue after exposure to daylight for a few days. Evidently during the vulcanization the coloring matter became decomposed and after the exposure to light and air its original composition was restored by taking up oxygen. After three years, however, all the samples lost the blue color and became gray. Evidently the alkanin is not as stable as chlorophyll and on account of its high price cannot be considered as a coloring matter for rubber.

Indigo Blue

It is hardly necessary to introduce the well-known synthetic indigo from the different species of indigofera plant from which indigo blue originates.

The indigo is mixed similar to the compound used in the test for chlorophyll. Small quantities, two or three per cent, are sufficient to impart a splendid blue color to the white rubber. The color, however, becomes decomposed during vulcanization and changes to a very light greenish shade. When subjected to light and air for a few days the action of oxidation on the surface causes it to assume the blue color again which becomes permanent although it is not as deep a shade as it was in the unvulcanized state.

From the foregoing experiments the conclusion may be derived that chlorophyll is the only coloring matter of botanical origin of the three tested which may successfully replace the coloring substances of mineral origin now used exclusively.

Information Exchange

Inquiry No. 116—(Letter addressed to Mr. Repony)—The writer was much interested in your article "The Analysis of Antimony Pentasulphide" in a recent issue of "THE RUBBER AGE AND TIRE NEWS."

I am particularly interested in obtaining a method for the separate determination of antimony pentasulphide and trisulphide in products which contain both. Can you refer me to any published methods covering this? I think that I may be able to develop a method from the circumstances that the trisulphide is decomposed by hot water while the pentasulphide is insoluble in it.

Do you think that it would be practical to attempt the separate determination of tri, penta and oxysulphides?

Answer by Mr. Repony: As far as I know there have been no methods published covering the requirements outlined in your letter.

Antimony trisulphide is in no way decomposed by hot water. The antimony trisulphide, represented by the mineral "Kermes," is insoluble in water. The soluble modification of Sb_2S_5, which is made in a laboratory, is not, in the real sense, soluble in water. However, the solubility is represented in a collodial state in an aqueous solution containing one part of Sb_2S_5 to 200 parts of H_2O and therefore under no condition can advantage be taken of this fact for developing methods for the separation of Sb_2S_5 from Sb_2S_3.

When antimony oxysulphide (Sb_2S_3) is eventually present in Sb_2S_5 then this must be considered as undecomposed when the mineral "Kermosite" (Sb_2OS_2) has been used for the manufacture of Sb_2S_3.

It is not possible to separate the three different compounds of antimony directly by any solution method, for unfortunately the three compounds are more or less soluble in all the particular reagents which may be considered.

The possible change to develop a method for the quantitative determination of the three different compounds must be sought by the determination of the total content of antimony, sulphur, and oxygen and finding indirectly by calculation the relative quantitative composition.

White Substitute

Inquiry No. 117.—We are in the market for white rubber substitute and will appreciate your referring us to manufacturers and dealers in this material.

Answer: The following is a list of the leading manufacturers and dealers in white rubber substitutes: T. C. Ashley Co., Boston, Mass.; Joseph Cantor, New York City; Carter Bell Manufacturing Co., New York City; Corn Products Refining Co., New York City; Henderson Rubber Co., Baltimore, Md.; Ernest Jacoby, 79 Milk Street, Boston, Mass.; Wm. H. Scheel, New York City; Stamford Rubber Supply Co., Stamford, Conn.; Tyson Brothers, Carteret, N. J.; Viscol Company, East Cambridge, Mass.; and Typke & King, Limited, Commonside East, Mitcham, England.

Bias Cutting Machine

Inquiry No. 118.—We are manufacturers of tires and tire repair materials and will appreciate your giving us names and addresses of manufacturers of bias cutters and score cutting machines.

Answer: The following concerns manufacture the machines that interest you: Birmingham Iron Foundry, Derby, Conn.; Spadone Machine Company, 126 Duane Street, New York City; United Shoe Machinery Corporation, Albany Building, Boston, Mass.; and the Cameron Machine Company, Brooklyn, N. Y.

Tire Wrapping Machine

Inquiry No. 119—We have a customer who expects to begin wrapping automobile tires with paper and we would appreciate your giving us the name and address of a concern that can supply a machine suitable for this work.

Answer: The machine you want is made by Tergelsen & Wernberg, Boston, Mass.

Manufacture of Heels and Soles

Inquiry No. 120—We are desirous of securing information of a technical nature dealing with the manufacture of rubber heels and soles. We would also like to know what is necessary in the way of equipment.

Answer—An excellent description of the technical steps in the manufacture of rubber heels and soles may be found in the past issues of THE RUBBER AGE. See pages 98-99, April 25, 1917—"The Application of Volume Cost to the Rubber Sole Industry"; pages 247-250, December 25, 1917—"The Manufacture of Rubber Soles and Heels"; Pages 143-144, May 10, 1919—"The Manufacture of Rubber Footwear"; Pages 192-194, June 10, 1919 (continuation of previous article). In order to engage in this business it is necessary to have: A source of power and steam, rubber mills, calender, hydraulic presses, dinking machines, holds, dies, hydraulic press of at least 2,000 pounds pressure per square inch, hydraulic press of 250 pounds pressure per square inch as an auxiliary, wrappers, liners, etc.

Waterproofing a Hole

By H. P. Pearson

Can a fabric that has holes in it, however small, be considered waterproof?

The answer is emphatically "no" and it is astonishing that this simple question and answer is only understood by a very small percentage of those engaged in industries where the waterproofing of fabrics enters materially.

The dictionary meaning of the term waterproof is "impervious to water" and consequently the only fabrics that can be called waterproof are those which are coated (rubberized for instance) or filled (as in the case of oil skins) so that the pores of the fabric are entirely closed.

If this is recognized, the term "absolutely waterproof" so often heard is seen to be ridiculous because a fabric is either waterproof or not. If it is not waterproof it does not follow that for certain purposes it cannot be used to protect something from water and to distinguish between waterproof fabrics impervious to water under all conditions and fabrics which resist water sufficiently under *certain* conditions the terms "water-resisting" and "waterproof-finished" is suggested.

Thus, a well rubberized sheeting or a good oil skin fabric may be said to be waterproofed while the impregnated ducks used for paulins can only be said to be water-resistant and the process they have been through is a water-proof finish. This applies also to raincoats which are not rubberized. They cannot be said to be waterproof because a heavy rain and a strong wind will drive through their pores, but they are rightly termed water-resistant as the fabric has been put through a waterproof finish.

The writer has been in the waterproofing business for twenty years and yet has never waterproofed a single yard of fabric. He has, however, waterproofed-finished millions of yards of all kinds of fabrics and made them water-resistant.

Even a rubberized fabric is not waterproof unless it is well rubberized so that the pores are closed up and even then the waterproofing character of the fabric only lasts as long as the rubber coating remains intact.

Insuring Foreign Credits Against Loss

American manufacturers are bound to contribute greatly to the industrial progress of Europe in the coming years on account of the new order of things growing out of the war recently ended. This country produces such a large part of the world's wealth that we are in duty bound to perform a large part of the task which peace has allotted the world. A large foreign trade will be the result, with its consequent necessity of foreign credit insurance. This item of insurance is of great interest to exporters and considerable discussion has attempted to guard against possible loss. A plan to overcome such losses which is presented here covers the situation completely.

Foreign credit insurance guarding against possible loss by exporters has been the subject of considerable recent discussion. There is in England a semi-official British Trade Corporation organized for the purpose of discounting approved bills in connection with foreign trade without reference to the holders. Insurance of this type was also quite common in Germany during the pre-war period.

The sub-committee on Foreign Trade, of the Tanner's Council of the United States, in considering the practicability of insuring against insolvency has invited trade associations to confer and to evolve, if possible, a working basis for a plan of mutual insurance against insolvency of foreign customers. This plan is to be carried out by a central board or corporation working under the auspices of these associations.

Comment has been rife as to the practicability of such a plan, and there is at present considerable difference of opinion upon the subject. The following from *The Hardware Manufacturer*, the publication of the Hardware Manufacturers Association, outlines the proposition:

Obligatory Long Credits

The export goods of the United States are being sold largely, and must be sold increasingly, on long credits, for we must now meet the renewed competition of other exporting countries which have been accustomed to granting long term credits. Again, we are a wealthy nation, and our sales will be largely to impoverished or less wealthy nations and we must lend them our money in order to sell our goods. It will be found that three or four months will be short credit terms and in many countries a credit term of six or nine months will be necessary.

Long term credits have been a hindrance to all but the largest of American exporters. Firms new to export have been wary of granting long credits in unknown fields. Experienced exporters, however, well aware of the usual sound nature of their foreign credit risks, have only limited their business to the amount that their finances would enable them to accept, for a firm that borrows money cannot permit its accounts receivable to exceed a certain proportion of its capital, and long term credits pile up much faster than domestic 30 to 60-day accounts.

Although American banks have taken a liberal policy in buying foreign drafts at a nominal discount, they are always bought with recourse to the seller and the time of discount is proportioned to his capital. This limitation affects all the small or medium sized exporters who probably do the bulk of American export business, therefore the sum of their limitations is, in a large sense, the limit of the possible total of American exports.

Export Credit Insurance

It is obvious, therefore, that some form of export credit insurance would be of material service to both American exporters and our banking world and would moreover do more than any other one thing to materially increase our export trade. While doubtless such insurance could be undertaken by private companies at lucrative rates, if we are to compete successfully abroad we cannot afford to saddle our exports with heavy insurance charges. The cost of foreign credit insurance should be small, in fact, it should be effected at as near cost as is possible; for this reason we are advocating a mutual credit insurance company centrally controlled so as to avoid duplication of overhead. Not only will the cost of insurance be less through co-operation, but the larger the corporation and the wider its spread of risks over diverse trade and diverse countries the stronger and more effective will be the plan and operation.

The corporation should be large enough to produce some actuarial tables and to spread the risk over the largest possible field.

Membership would be open to any reputable American exporting firm. No initial subscription to capital stock should be necessary provided the rates are adequate and the plan of assessment practical. Membership will constitute a blanket binder on all foreign time drafts for open accounts of each member except, of course, such risks as may be refused by the corporation. The corporation in this way protects itself by a great number of safe risks against a small proportion of doubtful ones. In other words, each member will report and pay premium on his whole export business.

Premium Rates

Whether there should be a flat rate, a rate for each country, or a rate for each risk must finally be worked out from actuarial figures, but doubtless the most practical plan would be to start with a flat rate or a very few separate rates and work into a certain degree of discrimination based upon our actuarial tables. One point is clear, however, poor risks should not be accepted even at enhanced rates; if the members are bound by blanket policies they should not be obliged to pay on any risk a rate above a moderate and fixed rate; risks that are not sound at that fixed maximum should be declined by the corporation.

Of course a member with the bulk of his liability insured can if he desires take an occasional long chance at his own risk, although the refusal of the corporation to write a policy will give him notice that that account is risky. The policy of the corporation, in other words, should be to make business with responsible foreign trade as cheap and thus as large as possible and not encourage high rates on speculative business with doubtful customers.

Rates would vary with the length of the draft. Assuming a base rate for a 30-day draft on any risk or class of risks there would be a fixed additional percentage for each additional 30 days. Just here it is important to recognize the difference between credit risks and merchandise risks for drafts are sometimes refused or payment refused at maturity beause of claims or disputes arising out of quality of goods, time of delivery, improper packing, terms of contract, etc., for which sometimes the consignee and sometimes the shipper is to blame. Such risks would be insured under the head of Rejection and not under the head of Insolvency which we are now discussing, but it will be noted that the corporation is in a position to not only detect and decline insurance on consignees abroad who habitually make unjust claims, but it can keep the membership informed of the practice of such consignees. It will be noted, however, that the policy against insolvency would be continued in force notwithstanding such merchandise dispute until the dispute is adjusted.

On every risk the corporation would set a maximum proportioned by its actuaries to the financial strength of the foreign customer and to the volume of insurance written against him. When his line is full the corporation would

have to refuse insurance on further sales to him; in certain circumstances, however, excess business could be taken and re-insured with established American re-insurance companies.

The Corporation Reserve

The initial rate like the initial premium of a mutual fire or liability insurance company will be fixed at a percentage greater than sufficient to cover the estimated ratio of loss. After payment of losses and expenses a fund should be set aside for reserve and the balance rebated pro rata to policy holders.

Such a corporation, with an assessible membership of strong firms, would be quite as valuable to the banks as to its members. The certificate of insurance attached to a draft would mean recourse to the corporation's resources and would enable the banks to buy very large lines of drafts with comparatively little regard to the strength of the sellers. The corporation could, therefore, count on the complete co-operation of the credit information service which American banks have established in many parts of the world. In a few cases it might have to establish its own service, with which it could reciprocate the courtesies of the banks. Some of the largest and best foreign credit files of American banks have already been placed at the disposal of the proposed corporation.

In the ledger experience of its own members, properly collected and tabulated, the corporation would have an equally valuable fund of credit information. Exchanges of ledger experience on foreign accounts are already maintained by the National Association of Manufacturers' and the American Manufacturers' Export Association, and a third is being established by the National Association of Credit Men. There will be overlapping and duplication in the work of these exchanges, so each stands to gain by consolidation. The proposed insurance corporation should offer to join, and, if desirable, to conduct the consolidated exchange.

Further, the consolidation of bank files on foreign credits seems inevitable. Five years ago, such a file was jealously guarded as a business asset and talking point for a bank. Today with at least half a dozen excellent files in operation and dozens more being developed the duplication becomes greater and the value of each less. It will presently pay the banks to pool their files in a credit clearing house, for which the proposed insurance corporation should be the logical home.

Procedure

Each member would estimate for the year his foreign sales on time draft and open account, and pay an advance premium based on the estimate. At the end of the year, his actual foreign sales, less risks declined by the corporation, would form the basis of adjustment of premiums and payment of rebate. A member receiving an order for a foreign client would receive in return a numbered certificate of insurance (which could be presented with the draft in case of its purchase by a bank) or else a notice of refusal to insure, with the reason. On rush orders request and reply could be telegraphed and confirmed by mail. Volume of business might justify offices in New York, Chicago, San Francisco and New Orleans but as all records of insurance outstanding would have to be in one place and as every request would have to be referred to them anyway, we are inclined to believe that the business could be done, at least for a while, from a single office in New York.

With one such office, headed by a man whose ability and experience should command the confidence of bankers and exporters, assisted by a few good actuaries and credit men and an adequate clerical force, and in special cases, by representatives on full or part time at foreign points, the expenses of the corporation should be small. There should be no expense of solicitation; if the scheme has the support of the various trade organizations interested in export, and meets the needs of their members, its membership should be recruited through them without cost. The Illinois Manufacturers' Association, the Iowa Manufacturers' Association and the Tanners' Council, which have submitted this proposal to their members, have received an immediate and almost unanimous response from members interested in export.

The experience of most exporters is that the loss ratio is smaller on foreign than on domestic business. The average loss ratio reported by three hundred firms engaged in South American business investigated by the College of the City of New York was less than 3-10 of 1 per cent. The proposed corporation would have better means both of avoiding bad accounts and of recovering losses, than would the individual exporter.

The exports of the members of the Tanners' Council alone run from $60,000,000 to $120,000,000 per year, and if only half of them were insured the Tanners' Council believe that the total cost of insurance loss and expense together, would not exceed 1 per cent. A corporation insuring exports in various trades would reduce its loss ratio by a vastly greater spread of risks, and if it covered so much as 10 per cent of the six billions of American exports, its expense ratio would be almost negligible.

It is believed that a quarterly advance premium of 2 per cent on estimated business with assessment of 2 per cent or 4 per cent additional if necessary, would give the corporation ample strength, ample working capital, and assure the accumulation of generous reserves and a substantial annual rebate.

Establishment

The operation of the corporation during the first year or two will be neither as economical nor as effective as later. Money must be expended in establishing the organization and the credit files before business can be expected at all, and the files will not reach maximum efficiency for several years. More risks will be declined and probably more losses sustained, at first than later. Nevertheless, the volume of information available at the start is so large and so accessible that the corporation should be able to begin covering risks in our principal markets within six months of incorporation, and with a fair spread of risk, should have small loss ratio from the start.

New Publications

TRADE-MARKS; booklet, 32 pages, 5¾x8¾ inches. Published by William E. Richards, New York.

The extreme importance of the proper protection of the trade-marks and trade names of American manufacturers, especially in foreign countries owing to the great increase in our foreign trade is emphasized in this extremely interesting booklet. A digest of the law and practice of the United States in reference to trade-marks; a digest of practice in foreign countries; piracy of trade-marks abroad; a schedule of charges—United States registrations, and a schedule of charges—foreign registrations, are among the subjects treated.

WEATHER; sixty-one pages, 6x9 inches. Published by the Carrier Engineering Corporation, New York.

This book, containing sixty-one profusely illustrated pages, tells about "Weather and the story of how it is manufactured." The application of stable weather conditions to the manufacture of rubber, textiles, aircraft, food products, motion pictures, automobiles, firearms, tobacco electrical apparatus and chemical products is entertainingly told. The influence exerted by temperature and humidity in producing a uniform article is emphasized and the manner in which results have been obtained are described. The book is well printed upon an exceptionally high grade of paper and is attractively bound.

Large Brooklyn Ship-By-Truck Parade

Fully 4,000 Motor Trucks Were in Line in Recent Brooklyn Ship-by-Truck Demonstration—Many of Floats Highly Decorated—Many Thousands Interested in the Long Line of Trucks

In the 25-mile long procession of motor trucks bearing samples of practically every product of local industry which passed through the heart of Brooklyn on October 12, another record was set. It was the "Ship by Truck" parade and industrial exposition on wheels, in which many hundreds of local commercial interests participated. Nothing like it has ever been seen in any city, although motor truck parades have been held in many American cities. There were fully 4,000 motor trucks in line, and in every respect the parade was a great success.

Thousands of persons gathered along Fourth Avenue, Flatbush Avenue, Bedford Avenue, Bushwick Avenue and Pitkin Avenue to watch the long line. A special permit for the use of Bushwick Avenue, which has been set aside as a parkway, was obtained through Mayor Hylan.

Many of the floats were highly picturesque. There was a good laugh when two horses given a holiday were put aboard one of their heavy rivals and paraded through the streets. A bright shining torpedo with white clad sailors to provide a nautical atmosphere was contributed by the E. W. Bliss Company. A complete hoisting apparatus with crane and a heavy weight proved to be one of the best mechanical exhibits from one of the local garages.

Forty trucks of various types, all laden with crackers and biscuits attractively displayed, came from the Loose-Wiles Biscuit Company plant in Long Island City, and the National Biscuit Company had a similar display. The Independent Salt Company varied the general run of the exposition by loading its trucks with the girls and men of their working force, all dressed in their Sunday best and making the most of their outing.

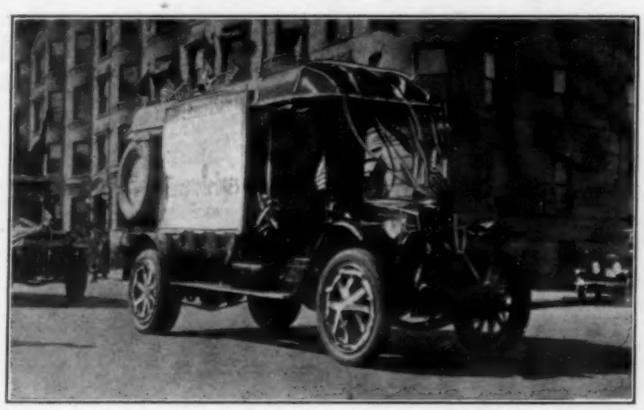
The huge Domino block especially made for the occasion by the American Sugar Refining Company created a good deal of interest as did the huge soap cakes, weighing 500 pounds each, on a big Kirkman & Sons truck, the colorful exhibits of the Robert Gair Company, and the machinery display.

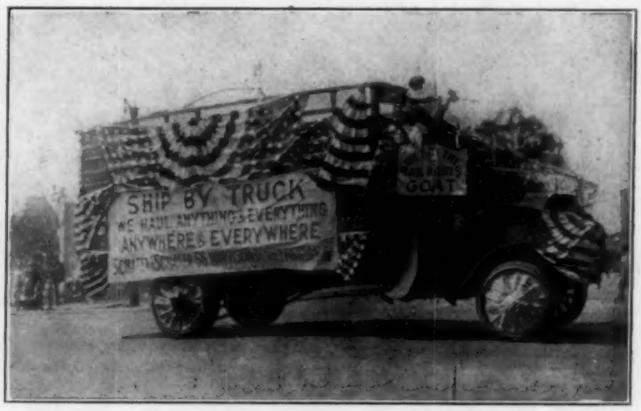
The old volunteer firemen from Patchogue, Southampton and several other towns with the apparatus which did excellent service a quarter of a century ago were a big feature. Much interest was also aroused because it became known that a championship water-throwing contest was to follow the parade, with Patchogue boastfully proclaiming the virtues of "Old Honey Bee," their famous old hand-engine. Pianos, player pianos in full swing, phonographs and other musical contributions relieved the more prosy industrial exhibits and competed successfully against the snorts and chugging of the trucks.

The grandstand was erected on Bedford Avenue at Grant Square. Borough President Riegelmann, who was interested in the plans since their inception, reviewed the entire parade and many prominent officials including Governor Smith and Mayor Hylan, were expected during the course of the parade. William H. Todd acted as grand marshal and A. S. Rampell was executive chairman. J. M. Wierk, vice-president of the Motor Truck Association of America, was present.

Along Flatbush Avenue, Bedford Avenue, and the various commercial streets in Williamsburg, Greenpoint, Bushwick and East New York there were large crowds, which gave testimony to the interest aroused by the spectacle. Every type of motor vehicle from the small runabouts to heavy seven-ton trucks with three-ton trailers were represented. Altogether the whole presented a forceful argument for the remarkable efficiency which has been reached in this form of transportation.

The "Ship by Truck" idea was brought to Brooklyn by R. W. Sykes Jr., head of the Firestone "Ship by Truck" Bureau. The executive committee in charge of the Brooklyn parade consisted of A. S. Rampell, chairman; R. W. Sykes, secretary; W. R. Couch, treasurer; Chester B. Fox, director publicity and advertising; M. Ray Stehley, Charles Ohlmann, F. J. Dose, R. E. Locke, J. W. Dreyfuss, Joseph Freeman, D. C. Adams Jr., W. R. Schepp, E. T. O'Loughlin.





SEVERAL OF THE FLOATS IN THE BROOKLYN "SHIP-BY-TRUCK" PARADE

Officials of Dominion Rubber Meet

Following the meeting of directors of the Dominion Rubber System on October 17th, thirty members of the head office staff and Montreal factories were entertained at dinner at the Windsor Hotel, Montreal, by President Charles B. Seger, New York. It is the first of a series of such functions by which the president and executive officers of the Dominion Rubber System hope to become more intimately acquainted with the department heads and superintendents of our organization.

President Seger was accompanied by Vice-Presidents W. A. Eden and Victor E. Mitchell, K. C. and Directors H. E. Sawyer, A. D. Thornton and J. N. Gunn—the latter leaving early in the evening for New York.

The event was informal and impromptu talks added interest to the occasion. Song sheets provided by Mr. Carroll enabled all to join heartily in singing popular songs of the day. Some of the members of the family displayed rare talent in story-telling and even the attempts to sing duets brought forth appreciative applause.

The presence of Vice-President Mitchell was a happy coincidence. The date, October 17th, being his birthday anniversary, he was the recipient of congratulations and best wishes for many happy returns, the felicitations being extended to him by President Seger.

Among those present were J. M. S. Carroll, G. W. Charles, N. M. Davison, F. J. Todd, John Myles, J. C. Rudolph, George Wilson, George Bergeron, A. E. Morrissette, D. A. Fisher, H. R. Nixon, W. A. Traill, J. P. B. Daigneau, J. G. Barrow, H. P. Nellis, J. J. Kieswetter, W. G. Smart, F. E. Johnson, C. H. Harding, J. H. Frye and W. F. Bilger.

A Mileage of Interest

J. F. Risch, sales manager of The Biltwell Tire & Rubber Co., of Akron, reports that he has recently come into possession of an interesting bit of evidence in regard to the first Biltwell tires to be retired from service.

Earl B. Armbruster, of Akron, has furnished the Biltwell factory an affidavit testifying to the fact that he secured two Biltwell fabric casings for use on his Cadillac touring car and drove these tires 14,348 miles and 13,862 miles respectively, and that they were still in usable condition.

Biltwell officials take a great deal of satisfaction in this performance as the casings were already liberally guaranteed —7,000 miles each — and doubled this promise.

Goodyear Owns Rubber Land in Sumatra

Several years ago The Goodyear Tire and Rubber Company sent representatives to investigate rubber plantations in Sumatra, with the idea of protecting its rubber supply back to the tree, through the establishment of its own plantations.

The company now owns a concession of 20,000 acres near the city of Medan, Sumatra, where the problems of growing rubber for its needs are being worked out. A portion of the plantation was already planted and producing when purchased. About 5,000 acres are now furnishing rubber which is constantly coming to the factory at Akron.

The plantation is divided into six parts, each approximating 3,000 acres and having its own manager. Thirteen hundred coolies were put to work felling the heavy growth of thicket. The first step was to clear out the vines and undergrowth, then to fell the trees. In the clearing-out process Chinese coolies were used for the heavy work and natives for the lesser tasks.

Felling the thicket and clearing away the underbrush, preparatory to planting the young rubber trees, is but a small part of the work, for good roads must be built in order that all parts of the plantation may be reached easily and quickly. Then after the land has been cleared the big steam tractor is put to work plowing. This is done to a depth of about eighteen inches. Twenty acres can be plowed in a day with a tractor and 250 coolies can plow three acres in the same time. The tractor is also used in pulling out the large stumps.

Labor troubles are practically unknown, for twenty cents a day and a reasonable shelter keep the coolies contented. Coal shortages and high prices have few terrors in a land where old Sol grows your dinner on a bush, furnishes plenty of free heat the year 'round, and is particularly friendly in determining style and amount of dress.

The Goodyear plantation is located in the eastern part of the island of Sumatra, about 300 miles north of the equator, and about fifty miles inland. A railroad runs between Medan and Siantar, and a government highway passes through the plantation, so that transportation problems are reduced to a minimum.

International Trade Conference Held

The International Trade Conference was held at Atlantic City during the week of October 20, with representatives of the five great nations associated in the war—Belgium, France, Great Britain, Italy and the United States—in attendance. The first day was devoted to meetings of committees while the two following were devoted to general sessions of the convention.

At the opening joint session of committees on Monday, A. C. Bedford, Chairman of the Executive Committee, said:

"We appreciate that the supreme need of the world is that Europe and America shall be restored to the utmost productivity without a moment's delay, and that to accomplish that there must be cooperation between Europe and the United States. The American people realize that the paths of destiny call us to a comprehension of the problems of the world at large. And American business men are fully conscious of the truth of President Wilson's statement that the destinies of the world will henceforth in large measure rest with those who conduct the commerce of the world. We feel that there is a new call to arms to the American business men to enlist in the cause of reestablishing economic order and of maintaining peace and social progress. We want to join in this cause with the business men of France, of England, of Belgium and of Italy."

To the foreign delegates Mr. Bedford said in part:

"We are conscious that no problems will come before this conference of more serious moment than those of foreign exchange and foreign credits. To discuss these with you in a spirit of cooperation and friendliness we have invited to meet you here some of our leading financiers. Those delicate questions of credit and exchange are essentially bankers' problems, and we want you to consider them with our bankers in the spirit in which they will meet you, and that is one of an earnest desire to make some progress in solving the complicated situations which confront both you and us. We realize the necessity of extending credit and we are most eager to find a practical way out of this most puzzling situation. We realize the necessity of international cooperation among business men, cooperation of a kind we have never had before. We want to work out these problems with you as friends and as co-laborers.

"Each of us approaches the deliberations of this conference in a constructive spirit. We are most eager that out of this conference will grow practical measures enabling us to cooperate with you, to extend all necessary credits and to work with you in solving the problems which underlie the reconstruction of civilization."

Foreign Delegates Visit Firestone

Members of the Allied delegations that attended the inter-Allied trade conference at Atlantic City, N. J., during the week of October 27, and afterward started on a tour of the United States, visited Akron on Saturday, November 15. The party is composed of business men representing Great Britain, France, Italy and Belgium, who are in this country for the purpose of studying trade conditions, and to prepare the way for a readjustment of foreign exchange rates by reestablishing the credit of their countries.

President Harvey S. Firestone, of the Firestone Tire and Rubber Company, was present at the Atlantic City convention and extended an invitation to the delegates to visit the plant of the firm. The delegates arrived in Akron shortly before noon and were entertained at luncheon by Mr. Firestone. In the afternoon the party was taken through the Firestone plant. Plant One, Plant Two, the Clubhouse and Firestone Park were visited and the foreign delegates were ready with expressions of appreciation for all they saw. In the evening the entire Allied delegation was tendered a dinner at the Portage Country Club by the Chamber of Commerce of Akron.

Selling Tires from the Sky

As far as is known The Goodyear Tire & Rubber Company is the first rubber manufacturing concern to have one of its salesmen secure an order for tires by airplane. Frank G. Hart, local Goodyear salesman at Schenectady, N. Y., recently flew in a plane from Albany to Schenectady, landing on a farm just outside the city. The farmer came out to extend greetings to his visitor, who after disclosing his name and line of business, secured an order from the farmer for two tires for his automobile. The tires were delivered the next day by an Albany dealer in Goodyear tires.

Safety Urged at Firestone

Safety as applied to industry was the subject of an address delivered to a group of managers, foremen and inspectors of the Firestone Tire and Rubber Company in the clubhouse auditorium at Akron on October 14. The speaker, C. W. Price, general manager of the National Safety Council, summed up his subject by saying that all the safety devices in the world and all the precautions possible for a company to take to safeguard its employees are powerless to accomplish results without the cooperation of the workers.

"A company may spend millions of dollars and may install the most up-to-date accident-preventing devices obtainable," declared Mr. Price, "but results will never be accomplished unless the workers themselves use precaution. Talk and act safety, interest every man in safety, and educate everybody along the lines of safety," he urged.

In the course of his remarks, Mr. Price quoted some interesting and startling statistics. Here are some of them:

First, three-fourths of all the accidents in this country are due to carelessness and could have been avoided. Second, during the nineteen months of the war, more persons were killed by accident than the American army lost in battle. To employ actual figures, 126,654 men, women and children met with accidental death. In the same period the American army lost only 56,227. Reverting to the first statement, three-fourths of all the accidents are preventable. Three-fourths of 126,654 is close to 95,000, and 95,000 persons would have been alive today but for their own carelessness or the carelessness of another.

Mr. Price took occasion to commend Firestone for what is being done in the way of safety work. "You men are fortunate," he said, "to have such a man as H. S. Firestone at the head of your organization." Specific mention was made of the campaign which President Firestone has promoted throughout the country, especially by the showing of "Careless America."

"To properly carry out the idea of safety in a company, five things are necessary," concluded Mr. Price. "The factory manager should be convinced of the value of safety propaganda. The foreman must be enthusiastic for safety. Every plant should have a safety engineer or inspector. Every plant should post safety bulletins concernings up-to-date devices for the prevention of accidents. Lastly, there should be a workmen's safety inspection committee, with an inspector to make recommendations for safety improvement."

Akron Firms to Build

(Special Akron Correspondence.)

Building permits issued recently in Akron call for the erection of a $148,000 machine shop for the Firestone Tire and Rubber Company and a $60,000 addition for the General Tire and Rubber Company. The Firestone machine shop is to be 315 by 325 feet. The General addition is to be 60 by 100 feet and three stories high.

Reliance Rubber to Build

(Special Akron Correspondence.)

Wadsworth, a small town twenty miles from Akron, is to join the rubber ranks. The Reliance Rubber Company, incorporated for $1,000,000, will build a 80 x 340 steel factory building there in the near future. Incorporators are P. E. McAllister, George P. Hoffman, Dr. M. F. Miller, R. A. Auble and A. H. Rohrer.

Activities of the Rubber Association

Announcement Is Made That Annual Dinner Will Take Place on January 5, 1919—Proposed Die Legislation—1919 Census of Manufacturers Being Compiled—Textile Sales by War Department

Notice of Annual Dinner

November 29, 1919.

TO ALL MEMBERS:

The Annual Dinner of the Association will be held on Monday evening, January 5, 1920, at the Waldorf-Astoria.

We are not yet in a position to offer advices respecting detailed arrangements, reservations, etc., and therefore you will receive more definite information regarding such matters in the near future.

The New York hotels are very much congested at the present time and our information is that this condition will prevail for many months to come. Therefore it is suggested that you make your hotel reservations as early as possible.

Rebuilt Tires

October 20, 1919.

TO FIRM MEMBERS:

As a matter of information I wish to advise that word has been received from Washington to the effect that the selling to the public of rebuilt or reconstructed automobile tires without "plainly and prominently indicating on the tire" that it is rebuilt or reconstructed, has been found an unfair method of competition in violation of the law, and the Federal Commission has ordered the Akron Tire Company, Long Island City, New York, to discontinue the practice.

A. L. VILES, General Manager.

November 12, 1919.

Repeal of Rubber Lands Restriction Enactment

TO FIRM MEMBERS:

As a matter of information, I am quoting below a message from a Washington source, as follows:

"The rubber lands (restriction) enactment passed on July 24, 1917, with subsequent amendments, prohibiting the purchase and sale in the Straits Settlement and Federal Malay States of tracts of land suitable for the cultivation of rubber, of more than 50 acres in extent, was repealed by the legislative bodies of these States on November 1st.

"The avowed object of the passage of this law in 1917, which was referred to as a war measure, was to prevent undue advantage in rubber land operations being given citizens or subjects of other more favored countries over British subjects who, by reason of war regulations, were prevented from transferring funds to British Malaya for investment purposes. Now that these disabilities have been removed, no reason exists for the further continuation of the rubber lands restriction enactment, hence its repeal."

The foregoing is of interest principally as an indication of the gradual return to a normal or pre-war condition in connection with the production of crude rubber.

A. L. VILES, General Manager.

Proposed Die Legislation

November 14, 1919.

TO FIRM MEMBERS:

There is sent you herewith a copy of a letter from the American Dyes Institute, 320 Broadway, this city, calling attention to the proposed legislation now before Congress known as the Longworth Bill, H. R. 8078, with reference to regulation of the importation of dyes, and the duties to be paid thereon.

The letter needs no amplification and it is suggested that if you are interested in the use of dyes and are in accord with the views expressed by the American Dyes Institute you may desire to take action along the line suggested in the next to last paragraph of Treasurer Danner's letter.

A. L. VILES, General Manager.

AMERICAN DYES INSTITUTE, 320 BROADWAY, NEW YORK.

The Association of Dye-stuff Manufacturers in the United States.

November 8, 1919.

Rubber Association of America, Inc.,
52 Vanderbilt Avenue,
New York City.

Gentlemen:

We bespeak your attention to the pending legislation now before Congress, known as the Longworth Bill, No. 8078, which has passed the House and is now before the Senate Committee.

This bill provides a tariff of 6c per lb., plus 40 per cent on intermediates and chemicals, and 7c per lb., plus 44 per cent, ad valorem, on dyes, and also a licensing clause providing that for a period of two years no chemicals or intermediates manufactured in America may be imported without an Import License.

It also provides that whenever the chemicals or intermediates are not obtainable from domestic sources on reasonable terms as to price, quality and delivery, such Import Licenses must be issued; thereby fully protecting the consumers on those products.

Your members will recall the lamentable situation consumers were in at the outbreak of the war and it was then keenly realized how so many industries employing many millions of workers and representing billions of capital invested were dependent upon the chemical and dyestuff industries of Germany.

The American manufacturers have made wonderful progress in the five years, and it was due to their efforts in the face of innumerable and seemingly insurmountable obstacles that other industries dependent upon these raw materials were able to continue.

In order that this pivotal industry may become self-contained, so that the American consumer may never again be placed in the same position as in 1914, and so that there may be an industry permanently established so vitally necessary to the country for the production of high explosives if needed, it is necessary that this industry receive further encouragement for a limited time, so that it will be able to compete with all foreign competition.

The Longworth Bill is the only solution which has thus far been suggested which, in the opinion of manufacturers and a large portion of consumers, will permit a continuation of development which will keep pace with the requirements of YOUR OWN and other consuming industries which are dependent upon a steady supply of raw materials.

The Licensing Plan is somewhat similar to that adopted by England except the period of time in the Longworth Bill is much shorter.

There is at present a War Trade Licensing Board which will cease to function immediately the Peace Treaty is signed and in the interval between the Declaration of Peace and the passage of the Longworth Bill (if it is passed) there will be a period when there will be no functioning body.

It therefore seems to us there is need of immediate action and if it is in order we would appreciate your placing this before your members at once, requesting those who are in favor of this legislation to immediately wire their Senators urging prompt favorable action.

Thanking you in advance for your courteous attention to this communication, I beg to remain

Very truly yours,
(Signed) H. E. DANNER, Treasurer.

1919 Census of Manufacturers

November 14, 1919.

TO FIRM MEMBERS:

This is to bring to your attention the fact that in the near future there will be distributed to manufacturers, by the Bureau of the Census, forms for reporting the rubber goods census for the year 1919. These forms have been worked out by the Statistical Committee of this Association in co-operation with the Chief Statistician for Manufactures of the Bureau of the Census, Washington, D. C., and it is believed that they are so arranged as to develop facts which will be of considerable value to the industry, and which have not been available in so complete a form heretofore.

Furthermore, this schedule is in conformity with the Classification of Commodities, issued by the Bureau of Domestic and Foreign Commerce, covering imports and exports.

The census of manufactures is taken every five years and is due for the year 1919, and the Executive Committee of this Association wishes to suggest that, for the benefit of the industry as a whole, and in order that its importance may be more comprehensively visualized, our manufacturers should co-operate with the Bureau of the Census by filing promptly a complete return, upon receipt of the schedule.

A. L. VILES, General Manager.

Complete information as to the nature of the data required from manufacturers by the Census Bureau at Washington will appear in THE RUBBER AGE, issue of November 25. This will be accompanied by a sample of the supplemental schedule which will be sent to all manufacturers of rubber goods in the United States.

Textile Sales by War Department

November 14, 1919.

TO FIRM MEMBERS:

This is to call your attention to the fact, that the War Department, through the Zone Supply Officer, Surplus Property Division, at 461 8th Avenue, offers for sale at frequent periods quantities of textiles which include drills, twills, duck, flannel, thread, raincoat lining, etc.

Complete information respecting color, width, weight, construction, manufacturer, location of the material and the quantity offered is furnished, and while it is not known to the undersigned how much of the material would be of interest to our manufacturers, I wish to suggest that those interested may obtain lists of these offerings regularly by communicating with the Zone Supply Officer on the Tenth Floor, Section D, of 461 8th Avenue, New York City.

A. L. VILES, General Manager.

Goodyear Employes Purchase Stock

The Goodyear Tire and Rubber Company has the largest number of employe stockholders of any industrial concern in the world—with the exception of the United States Steel Corporation. This statement was recently made by President F. A. Seiberling at a special meeting held at the factory in Akron.

Announcement was made that in the recent two-week campaign at which Goodyear employes were given opportunity to subscribe to the $40,000,000 preferred stock issue of the company, 17,101 workers subscribed to a total of $7,364,700 worth of stock. Sixty-six per cent of the 20,000 employes are holders of this issue. The workers subscribed to an average of five shares each.

President Seiberling stated that Goodyear stockholders and employes had subscribed $39,514,000 of the total authorized stock issue, adding that enough requests had been received to close out the entire $40,000,000 of shares.

These figures offer interesting comparisons to those of the first and second Goodyear preferred stock issues—financed wholly by the Goodyear organization and sold to the employes and tire users.

Of the $15,000,000 preferred stock issue of 1918, when the idea of Goodyear financing itself was forced by war time money dearth, 4,900 employes subscribed for $1,009,000 worth of stock—thirty per cent of the 12,000 workers. The average number of shares taken was two.

Mr. Seiberling believes that the ease with which the latest issue was floated resulted from the spread of the "Goodyear Spirit" which recognizes that the "Industrial Republic" idea of deciding labor problems—in operation at Goodyear—is fair. He believes that recent results of the stock campaign indicate the faith of Goodyear workers in the factory's product and future.

The method of selling more than $7,000,000 of stock was a splendid example of organization. Preliminary announcements of the sale were made in the house organs, but personal explanation was made by employe-salesmen working in twenty-four-hour shifts.

Workers were called to the sales offices in various departments and given talks lasting an hour—on company time. Ten minutes were spent in talk on the value of stocks and the remainder in explaining terms. As a result $100,000 worth of stock was sold in the first three hours.

Workers were enabled to purchase this stock by payment of $1 a week per share, being charged five per cent interest on the remainder until the stock is paid for. In the meantime employes receive seven per cent dividends, which is placed against the purchase price. A bonus of $3 a share is paid anually if the employe remains in Goodyear employ and retains the stock.

After all employes subscribing had been checked against payrolls, those who had not subscribed were visited by a "mopping-up" squad of salesmen. Many sales were made to those who had been absent or too ill to attend the first session.

General Tire and Rubber Stocks

(Special Akron Correspondence.)

General Tire and Rubber Company stocks have been listed on the Cleveland exchange. The common has attracted a bid of $500, without any sales to date. The company has outstanding $470,000 of common and $927,150 of preferred.

The General Tire and Rubber Co. is an outgrowth of the Western Tire and Rubber Co. of Kansas City. M. O'Neil, owner of a department store in Akron, and associates took over the western company in 1916 and established a plant with 100,000 square feet of floor space on an eleven-acre parcel in the eastern section of Akron.

Sales of the company show an interesting growth. For the year ended November 30, 1916, sales totaled $219,197. For the next twelve months sales amounted to $1,284,841, while for the year ended November 30, 1918, they were $2,363,872. Up to August 31 this year reports show total sales of $2,649,825.

Net earnings for the year ended November 30, 1918, were $210,000, after depreciation, but before taxes, and for the eight months ended August 31 this year net earnings were $361,650, or at the rate of $500,000 for the year.

A new building has just been completed which will double the present capacity of the plant. Officers of the company are: M. O'Neil, president; William O'Neil, vice-president and general manager; Charles Herberich of the Depositors Savings and Trust Co. of Akron, treasurer, and W. E. Fouse, secretary.

Study of Vibration in Structures

Four years ago the Aberthaw Construction Co. started an investigation on the vibration of buildings, particularly manufacturing buildings. The study was intended to cover not only the causes of vibration, but also the effects on the structure, on the machinery installed, on the health and well being of the workers, and on the quantity and quality of production.

A preliminary report was published in the fall of 1916; but our entry into the war, and the many new problems which that brought, put a summary stop to the work. It is now being taken up again with the idea of following it through to a point where a complete report can be published. The Aberthaw Construction Co. will therefore be glad to have engineers, manufacturers, and others having knowledge of the subject, or having had specific experiences which would throw light on any of its phases, communicate with the company at 27 School Street, Boston.

The previous work on this problem showed a wide diversity of opinion on some of its angles. It also developed that there is very little quantitative information extant which can be relied upon as giving authoritative data. It is particularly desired, therefore, that information of this character, however limited in its application, may be made available for the study.

Goodyear to Build Girls' Dormitory

To help relieve the serious housing conditions existing in Akron, Ohio, caused by the wonderful growth of the city, The Goodyear Tire & Rubber Company is announcing that a $200,000 girls' dormitory will be erected immediately. This dormitory will accommodate 175 girls and is designed for use by the many girls that are constantly coming to Akron to take positions with the company. The building is to be a three story brick structure, situated near the factory. The management of the dormitory will be vested in the Social Service department of which Miss Clara E. Bingham is manager. The project will be operated on a cost basis as there is no desire on the part of the company to profit from its operation. The girls will pay for their accommodations at actual cost to the company.

Deaf Make Good at Tire Building

Workmen who neither talk nor hear are finding the word "Welcome" on the doormat of the Firestone factories at Akron. Since March of this year approximately 100 have been employed.

B. M. Schowe, whose whole duty it is to employ the deaf and look out for their interests while they are members of the Firestone organization, declares they make excellent workmen.

"The non-speaking deaf," he says, "have long been refused employment by careless employers, who have underestimated their worth in industry. Tire manufacturers were among the first to recognize this worth and to offer them a welcome. At the Firestone factories we find that on the whole they make capable, steady workmen. They are well enough educated for most any line of work in which the power of speech and of hearing are not essential, but in the rubber factories they find ideal employment because tire-building operations are highly specialized, and after learning the rudiments of an operation the workman needs no further instruction but can work along silently in acquiring his skill.

"The man directly in charge of the deaf must have patience enough to give necessary instructions in writing, but the instructor generally benefits by the added effort. It opens up a quick and simple way for the good foreman to gain the workman's regard and loyalty.

"They are working with us in all departments, excepting in the mill, pit and calender rooms, where the heavy machinery is not considered absolutely safe for the man who cannot hear. They make excellent tire finishers, tread stock assemblers and tube makers. Arrangements are now being made to bring them into groups, with a deaf inspector over them. The steel products unit already offers them opportunities as rim inspectors."

Socially these men who speak the sign language generally group together. At the Firestone factories they are referred to as "The Silent Colony." They have their own reading and assembly rooms at the employees' club house, but are encouraged to make us of all the club house facilities. In athletics they are especially good. They expect to have Class A basketball and bowling teams entered this winter in factory competitions. One is a member of the Firestone track team and another is a champion swimmer. At a smoker recently one met all comers at boxing.

Harry C. Ware was the first member of the "Silent Colony" to go with Firestone. He joined the organization in 1911 as a tire builder and still holds the job. He owns a block of stock in the company, as do several of his companions. One member of the colony, John Stitch, was a soldier in France. He lost his hearing while in the army and has a medal for valor. None of the 17,000 employees at Firestone have anything but a good word for "The Silents."

Rubber Shipments to United States

Consul Pickerell at Para, Brazil, cables that total exports of crude rubber from Para and Manaos, Brazil, and Iquitos, Peru, during September were 8,325,830 pounds, compared with 4,536,360 pounds for the same month in 1918. Shipments to the United States aggregated 7,771,744 pounds and to Europe 554,086 pounds, compared with 4,242,333 and 139,654 pounds, respectively, last year.

Trade Building Activities

Firestone Announces That Their New Steel Products Building Will Soon Be a Reality—Estimated Cost Will Be $1,000,000—New Rubber Concern to Operate in Middletown, N. Y.

Ground has been broken at Akron for an additional $1,000,000 plant in the group of Firestone factories. The new plant will house the Firestone Steel Products Company, which annually produces approximately one and one-quarter million demountable rims for pneumatic automobile tires and sixty-five per cent of the steel bases used in the United States for solid truck tires.

That the company has had a phenomenal growth, equalled by few organizations in the automotive and allied industrial fields, is evidenced from a brief sketch of its history issued by J. G. Swain, its vice-president, in announcing the beginning of construction of the new plant.

"The Firestone Steel Products Company," the announcement says, "at present occupies the group of buildings which until 1910 housed the entire manufacturing facilities of the Firestone Company. This group which was then too small to meet the demands for Firestone tires, is now found to be too small to meet the demands for Firestone rims.

"H. S. Firestone, president of both the steel products company and the tire and rubber company bearing his name, went into the rim manufacturing business not because he desired an additional source of income, but because as a tire manufacturer he thought the tire industry needed a more substantial and practical rim than was being manufactured at that time. Before going into the manufacture of rims, he made an effort to induce rim manufacturers to build a rim such as he thought the industry needed, and being unable to induce the manufacturers to build a more practical type of rim, he started to secure these rims from other sources.

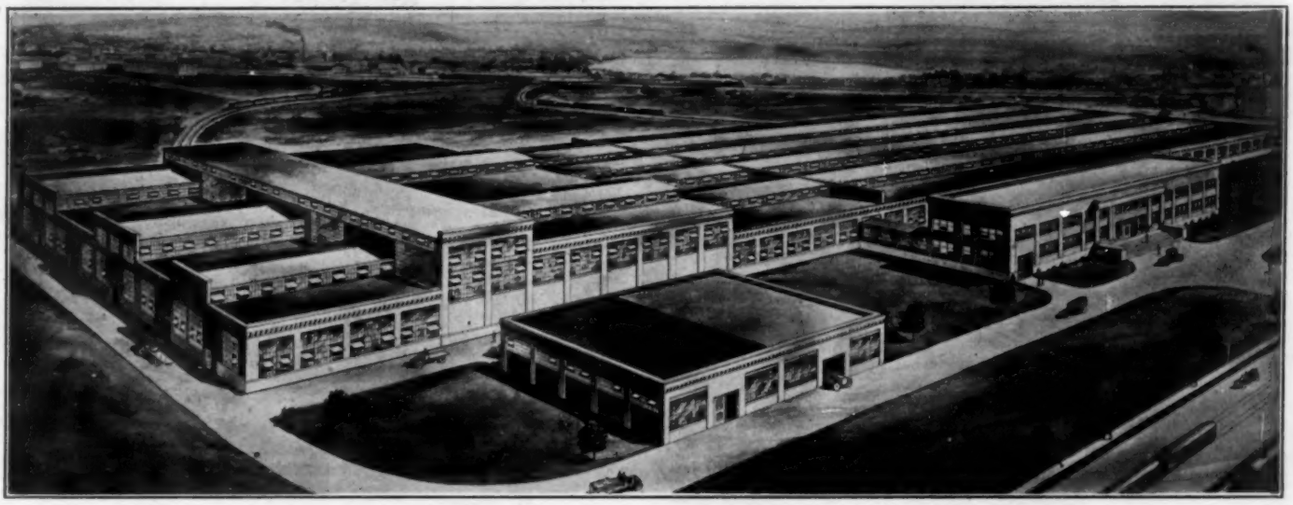
"The Firestone rims were first manufactured in Cleveland, the rim that was produced being of the demountable type and embodying the most finished thought in rim construction, it was immediately adopted by a large portion of car manufacturers.

"By 1910 the large sizes of solid tires were coming into use. There was a need for steel bases for these tires. As the demand promised to grow steadily, Mr. Firestone installed a welding plant as part of the Firestone Tire and Rubber Company's plant, where they were fashioned. Shortly after he decided the company should turn out its own rims for pneumatic tires and enlarged the welding plant for the purpose.

"In 1916 the demand for rims reached over 1,000,000 mark, and by May, 1918, the business had grown to such proportions that it was decided to form a separate company to produce rims and steel bases. The Firestone Steel Products Company was the outcome."

In the new plant the company will have the most modern and efficient facilities obtainable. The main building will be 860 feet long and 250 feet wide. Advantage will be taken of every opportunity to give the workers light and ventilation. The machinery, from large traveling crane to small riveting device, will be of the most improved type.

Immediately in front of the main building will be a two-story office building, 170 feet long and 40 feet wide. It will be connected with the main building by covered bridges. A cafeteria for the entire factory force will be housed in the basement of the same building.



FIRESTONE STEEL PRODUCTS BUILDING—AS IT WILL LOOK WHEN COMPLETED

Rubber Factory for Middletown

A one million dollar rubber concern, known as the Middletown Rubber Company, Inc., has been organized by Chicago and Cleveland Tire men and will erect a modern plant at Middletown, Orange County, New York, to produce "Middletown Cord" casings, inner tubes and all other rubber products, a new charter having been granted on application of its attorneys, Clarke & Latham, of New York City,

The company has secured a site on the main line of the Erie R. R. and will be favored by water power and ample labor.

Associated with M. J. Friedman, president, are William Rusnak, Chicago, owner of Edison Tire and Rubber Company, vice-president; J. T. MacDonald, Cleveland, formerly with the Ideal Tire and Rubber Company, treasurer and general manager; S. A. Thompson, Cleveland, formerly with the Firestone Company, secretary, and T. W. Decker, Cleveland, President Hardman Rubber Company, director, all of whom are experienced tire men.

The company has opened their executive offices in the rubber district at 5 Columbus Circle and downtown offices in the Stewart Building, 280 Broadway, New York, and are offering to the public a limited amount of the preferred stock with a liberal bonus of the common.

World's Rubber Supply

The aggregate production of Eastern crude rubber for this year is placed at 360,000 tons, of which 320,000 tons will be of the plantation grades and 40,000 tons will be wild. This figure, according to a report rendered to the Department of Commerce by Alfred Nutting, clerk in the American Consulate General of London, was announced by the Chairman of a well-known British rubber concern at its recent annual meeting.

"Concerning consumption," reports Mr. Nutting, "the Chairman stated that the United States has imported over 150,000 tons during the first eight months of the current year, and the total for the twelve months would aggregate about 220,000 tons. Against this the net imports of the United Kingdom were only 40,000 tons, which he estimated would meet the year's consumption. France took 14,500 tons in the first six months and for the year may need 30,000 tons. Italy's requirements he estimated at 15,000 tons; Canada, 10,000 tons; Japan, a similar amount; and, allowing 25,000 tons for the rest of the world, said that the total consumption would reach 350,000 tons, against a production of 360,000 tons." He concluded by expressing the opinion that, owing to the greater use of rubber for transport vehicles as well as for new purposes, the rubber industry is likely to be faced with a shortage of raw material rather than of oversupply.

McAvoy Now in Omaha

Dan McAvoy has been appointed manager of the Omaha branch of the Pennsylvania Rubber Co., Jeannette, Pa., succeeding O. A. Olson. Mr. McAvoy has,

DAN MCAVOY

for the past year, acted in the capacity of traveling representative of the company in the states of Nebraska and Iowa.

New Gordon Sales Manager

M. S. Lines, who for the past two years has been special sales representative in the eastern states for the Gordon Tire and Rubber Company, of Canton, Ohio, has been promoted to the position of sales manager of that company, succeeding A. W. Senz, who has resigned to become associated with the L. and M. Rubber Company. Mr. Lines before becoming identified with the Gordon Tire and Rubber Company was for seven years connected with the sales department of the Michelin Tire Company.

J. P. Davis Heads Trade Association

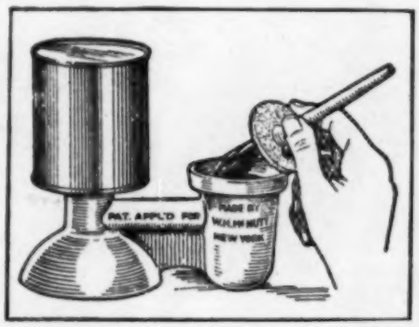
J. P. Davis, purchasing agent of the Belden Manufacturing Company, of Chicago, has recently been elected president of the Purchasing Agents' Association of Chicago. Mr. Davis was formerly assistant purchasing agent for the Standard Underground Cable Company, of Pittsburg, and came to the Belden Manufacturing Company as purchasing agent in 1916. The position to which he has been elected carries with increased importance inasmuch as the 1920 convention of the National Association will be held in Chicago.

International India Rubber Builds

The growth of the International India Rubber Corporation, manufacturers of South Bend Tires, at South Bend, Ind., has been so great that they have outgrown their original plant. A new building is now being constructed which will add 4,000 extra feet of floor space for storage purposes. Plans are nearly completed for a new factory building thousand tires and tubes per day.

Rubber Cement Dispenser

A system of storing, distributing and using rubber cement has been evolved by William H. McNutt, New York City, and has been recently placed upon the market. The accompanying illustration gives an idea of the dispensing device which, it is stated, will tend to save both labor and material. When these dispensers are in use it is not necessary to store the cement in large tanks on the floor of the factory and compel the operators to wait their turn. The small containers are supplied the operators as they require them without loss of either time or liquid. Application of the cement by means of a brush will bring more satisfactory results. In the new arrangement the brush is continually immersed in the cement when not in use, which tends to make the brush last longer than it would under ordinary circumstances. It is

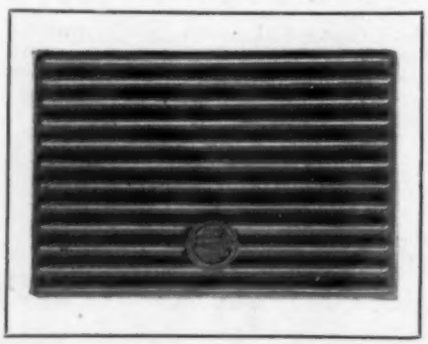


CEMENT DISPENSER

furthermore protected by a disc which serves the double purpose of keeping the cement from the handle and covering the cup of the dispenser when not in use.

Mats Improve Car's Appearance

The accompanying illustration shows the latest style of Marathon mats placed upon the market by the Marathon Tire



MARATHON MAT

and Rubber Company. These mats when placed upon the running-board in front of each door prevent the tracking of dirt and grease into the car. In addition to saving the floor carpet from spots and stains they also prevent unsightly holes from being worn in the running-board. The smaller mat used as an accelerator mat covers holes made in the floor covering by the heel and provides a non-slipping rest.

New Tire Duck Company

The John H. Meyer Tire Duck Company, chartered in the State of New Jersey and with its principal offices located in Newark, will open a branch in Philadelphia to manufacture cotton yarns and weave all kinds of goods. The company has acquired the large mills at the southwest corner of Lewis and Ashland streets in Frankfort, Pa., with a tract of about seven acres extending to the Frankfort Creek, and occupied by the Delta Spinning Company, for a consideration of $175,000. The sale includes machinery and equipment.

A. W. Senz with L. and M. Rubber

A. W. Senz, formerly sales manager for the Gordon Tire and Rubber Company, of Canton, Ohio, has been appointed general

A. W. SENZ

manager of sales of the L. and M. Rubber Company, of Carrollton, Ohio. Mr. Senz has many friends among tire jobbers and is well fitted to assume the marketing of the L. and M. products.

Martin in Firestone's Export Department

A. J. Martin, formerly connected with the advertising department of the Firestone Tire and Rubber Company, at Akron, has been transferred to New York as a member of Firestone's export advertising department.

Mr. Martin entered the employ of the company in April, 1917, on the staff of the dealer's service division of the advertising department. When those functions were transferred to the sales organizations, he handled the work for the East. On September 1, 1918, Mr. Martin entered the officers training school at Camp Gordon, Atlanta, Ga. He returned to the advertising department on January 4, 1919 and has been with this department until his recent departure for New York.

Record Non-Stop Run

A non-stop run of 1,451 miles, from Green Bay, Wis., to New York City, in 63 hours, is the remarkable record recently established by a new Oneida truck, model B-S carrying a load of 1½ tons. A schedule of 23 miles an hour was maintained, running continuously night and day except for meals and taking on supplies. The truck was shod with heavy duty Goodyear cord tires.

Crude Rubber Imports for October

Figures compiled and recently issued by the Rubber Association of America show the importations of crude rubber into this country for the month of October to have totalled 28,888 tons. This is approximately three times the amount that was imported during October, 1918. The figures also show that during the first ten months of the present year the crude rubber imports amounted to 185,684 tons. Following are the figures showing the imports in detail:

PLANTATIONS

From.	Tons.
Liverpool	710
Glasgow	454
London	6,526
Marseilles	15
Genoa	16
Singapore	9,657
Rotterdam	237
Colombo	1,957
Delli	136
Batavia	2,224
Calcutta	119
Sourabaya	1,240
Port Swettenham	47
Penang	1,881
Japan and others	264
	25,483

MANICOBAS AND MATTO GROSSO

Montevideo	174

AFRICANS

Liverpool	12
Hull	22
London	2
Bordeaux	399
Singapore	20
Antwerp	53
	508

CENTRALS AND GUAYULE

Centrals (Mexico and Central America)	108
Guayule (Mexico) Eagle Pass by rail	25
	133

PARAS

Manoas	414
Para	841
Buenos Aires	1,052
Iquitos	283
	2,590

GUMS, WASTE RUBBER, ETC., IMPORTED FROM VARIOUS SOURCES

Waste	106 Tons
Balata	67 Tons
Miscellaneous Gum	1,985 Tons

COMPARISON 1918-1919

	October, 1918.	October, 1919.	Total Importations for 10 Mos. End'g Oct. 31, 1919.
Plantations	7,299	25,483	157,336
Paras	1,958	2,590	22,650
Africans	150	508	2,544
Centrals	9	108	1,243
Guayule	93	25	1,478
Manicobas and Matto Grosso	....	174	433
	9,509	28,888	185,684

ARRIVALS PLANTATIONS FOR OCTOBER, 1919

From.	Arrived At.	Tons.
Singapore	New York	8,638
Singapore	San Francisco	4
Singapore	Seattle	329
Singapore	Vancouver	686
Penang	New York	1,755
Penang	Vancouver	126
Batavia	San Francisco	12
Batavia	New York	2,212
Sourabaya	San Francisco	268
Sourabaya	New York	972
Japan and others	San Francisco	264
Calcutta	New York	119
Port Swettenham	Vancouver	22
Port Swettenham	New York	25
Colombo	New York	1,957
Genoa	New York	16
Marseilles	New York	15
Glasgow	New York	454
Liverpool	New York	710
Delli	New York	136
Rotterdam	New York	237
London	New York	6,526
		25,483

ARRIVALS OF PLANTATIONS BY PORTS

Atlantic Ports:		
New York		23,772
Pacific Ports:		
San Francisco	548	
Seattle	329	
Vancouver	834	
		1,711
		25,483

Leavitt in New Position

Arthur H. Leavitt, formerly with the B. F. Goodrich Company, has accepted the position of assistant sales manager of the Akron Rubber Mold & Machine Company, of Akron, Ohio. Mr. Leavitt graduated from Cornell University in 1909, and

ARTHUR H. LEAVITT

after spending two years in the production department of the B. F. Goodrich Company was transferred to the sales department as assistant sales manager of truck tire sales. In 1917 he entered the army and served in the Motor Transport Corps where he rose to the rank of major. Upon his discharge he returned to Goodrich, and was placed in charge of pneumatic truck tire and metal products sales.

Large Increase in Car Ownership

There is one motor vehicle for every fifteen persons in the United States. This calculation is based on the latest authentic automobile and truck registration figures which have just been compiled by the B. F. Goodrich Rubber Company. The total number of passenger cars and trucks listed is 6,786,550. This represents a thirteen per cent gain over the 6,023,605 registry of January 1, 1919. In other words the latest tabulations show that 762,945 more cars are now in use than there was the first of this year.

A neck and neck race is being waged between New York and Ohio for leadership in state registration—the Goodrich figures showing New York with a registration of 502,785 while Ohio trails closely behind with 480,000 cars and trucks. Nevertheless Ohio is forging ahead in motor ownership at a faster clip than in New York State and may step into first place before the first of the year. Next in the "big six" group, named in the order of their rank, are Pennsylvania, Illinois, California and Iowa.

During the period since the first of the year fifteen states have made percentages of increase greater than the national increase of thirteen per cent. Those states are Ohio, California, Georgia, Virginia, Tennessee, North Carolina, Kentucky, South Carolina, Alabama, West Virginia, Louisiana, Idaho, Utah, Wyoming and Delaware.

The most fertile field for the automobile salesman is in the mid-west, as the following figures of population per car will point out. They rank next in order to Iowa and Nebraska for automobile density:

	Pop. per car.
South Dakota	7.55
California	7.82
Montana	8.84
Kansas	9.09
Wyoming	9.61
North Dakota	10.09
Minnesota	10.21
Michigan	10.90
Arizona	10.91
Ohio	10.98
Indiana	11.19
Wisconsin	11.36
Colorado	11.48

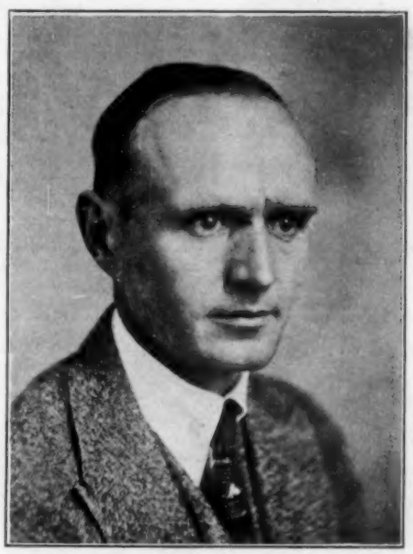
Over half the automobiles and trucks in the United States—3,641,200—are found in ten states. They are: New York, Ohio, Pennsylvania, Illinois, California, Iowa, Michigan, Texas, Indiana and Minnesota. Each has a registration greater than 225,000.

New Appointment for Rockhill

The automobile industry generally, and the tire world particularly, will be interested in the announcement by The Goodyear Tire & Rubber Company, of Akron, Ohio, of the creation of the position of sales manager, and the appointment to that position of L. C. Rockhill, who is widely known in the trade.

The appointment, coming as it does, at a time when Goodyear is able to announce the close of the most successful year in its already remarkable history, with a total gross sales of over $169,000,000, will attract wide attention to the man who will direct the sales policies of this great American industry whose activities reach to the far corners of the world.

Mr. Rockhill has been with Goodyear something over twelve years. Previous to that time he was in the advertising depart-



L. C. ROCKHILL

ment of a Cleveland newspaper. His first service with Goodyear was in charge of the repair department, which was a subdivision of the automobile tire department, handling repairs and adjustments. He was successively made manager of the aeronautical department, manager of the automobile tire department and assistant sales manager in charge of tire sales.

The Goodyear announcement is in line with their consistent policy of recognizing ability and rewarding loyal service in their ranks, and Mr. Rockhill's advancement to the position of sales manager follows naturally, by virtue of his long experience with sales work.

American Rubber Patents

ISSUED OCTOBER 28, 1919

1,319,695—To Francis B. Converse, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N. Y. Machine for making cord tires.

1,319,726—To Hugh H. Schramm, New York, N. Y. Resilient vehicle-wheel.

1,319,770—To Albert Hargraves, Akron, Ohio. Expansible core for vulcanizing tires.

1,319,860—To Richard W. Funk, Weehawken, N. J., assignor by mesne assignments to Universal Rim Company, Chicago, Ill. Tool for operating vehicle wheel rims.

1,319,862—To Alexander W. Gillespie, Chicago Heights, Ill., assignor to Calumet Steel Co., Chicago, Ill. Former or shoe for tube-forming machines.

1,319,864—To James E. Hale, Akron, Ohio, assignor to the Goodyear Tire and Rubber Co., Akron, Ohio. Tire-making machine.

1,320,304—To John B. Zimdars, San Francisco, Calif. Pneumatic tire.

1,320,319—To John J. Convery, New York, N. Y., assignor to Kelly-Springfield Tire Company, Akron, Ohio. Tire-building machine.

1,320,343—To Frank J. Pierce, Parkers Landing, Pa. Vehicle-tire.

1,320,357—To Jacob Backer, St. Paul, Minn. Detachable heel.

ISSUED NOVEMBER 4, 1919

1,320,382—To Emil R. Draver, Richmond, Ind. Wheel carrier.

1,320,393—To Edmund M. Houston, Minneapolis, Minn., and William A. Houston, Sioux City, Iowa. Fountain-pen.

1,320,913—To John Pieper, Salt Lake City, Utah. Auto-tire rim clamp.

1,320,940—To Charles F. Stephenson, Fostoria, Ohio. Anti-slipping device for vehicle wheels.

1,321,032—To Sigfried E. Haddorff, Irene, S. D. Non-skid attachment.

With the Retail Trade

Frey & Boasberg, 1705 Surf Avenue, Coney Island, New York City, have opened a retail tire and accessory store.

C. Barringer, Soloman, Kan., will open a new tire vulcanizing and repair shop.

The Karr Tire Shop, Wakefield, Kan., Clyde Ross, manager, has opened for business.

The Hallettsville Tire & Vulcanizing Company, Hallettsville, Texas, M. H. Elder, manager, has opened a steam vulcanizing plant.

The Marshall Vulcanizing Works, Modeste, Cal., has leased the store adjoining its present quarters on Ninth Street. This step will add 900 square feet to the concern's floor space.

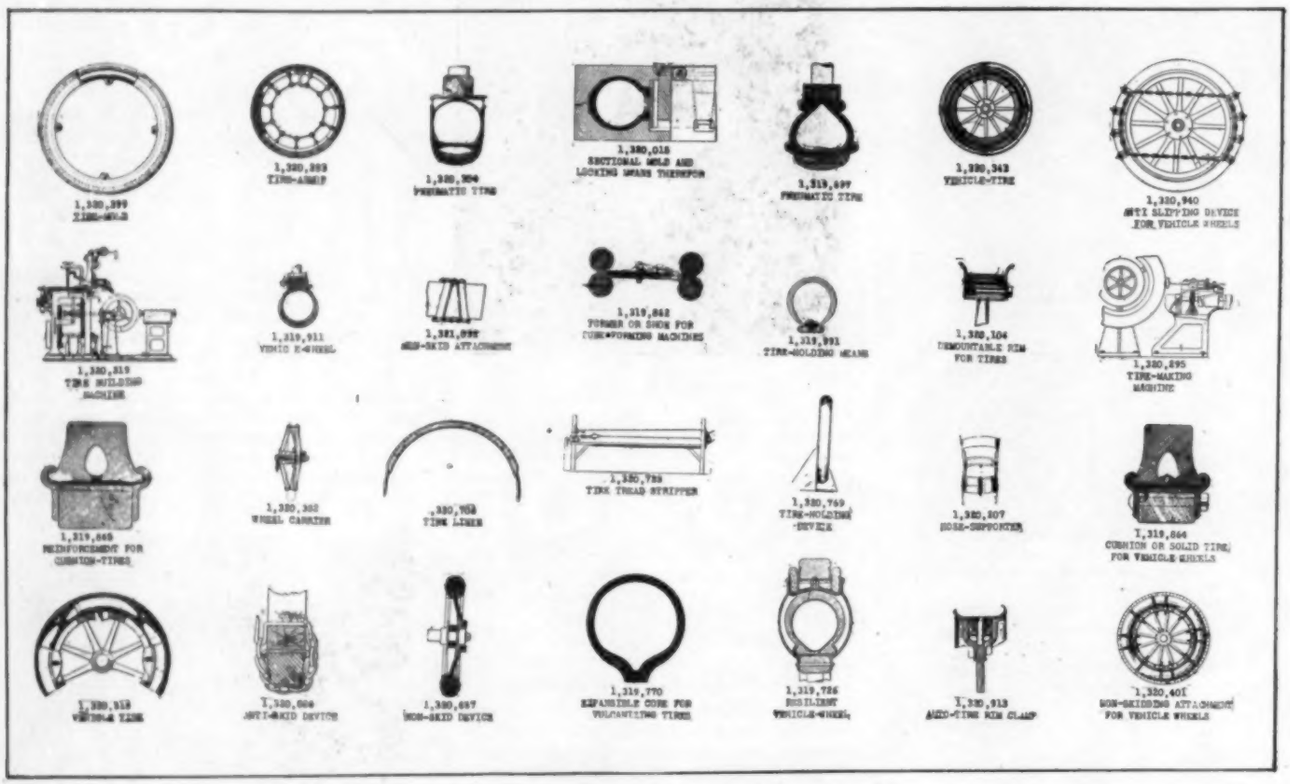
The Akron Tire Company, a branch of H. Grace & Company, has opened up for business at 708 Main Street, Waltham, Mass. This new concern will carry all makes of tires.

The Worcester Tire & Rubber Company recently opened a new tire store on Main Street, Worcester, Mass., with L. M. Cahn as manager.

The Miller Tire Company has opened for business on Grandby Street, Norfolk, Va., with J. P. Gell as manager, and will carry a full line of tires and tubes.

A service station has been opened in Raleigh, N. C., by the Capital Garage, which will carry in stock a line of accessories and Falls tires.

A tire repairing, vulcanizing and retreading shop has been opened in the Kreklow Building, Water Street, Fort Atkinson, Wis., by the Fort Atkinson Tire & Vulcanizing Company. V. E. Morris and James Markley, members of the firm, will be in charge.



1,320,085—To Francis B. Converse, Akron, Ohio, assignor to the Goodyear Tire and Rubber Company, Akron, Ohio. Cushion or solid tire for vehicle-wheels and method of making same.

1,319,865—To James E. Hale and Elmer F. Brunner, Akron, Ohio, assignors to the Goodyear Tire and Rubber Company, Akron, Ohio. Reinforcement for cushion-tires.

1,319,911—To Alexander S. Spiegel (now by judicial change of name Alexander S. Speer), Chicago, Ill. Vehicle-wheel.

1,319,991—To John T. Clark, Provo, Utah. Tire-holding means.

1,320,015—Hector V. Lough, Hartford, Conn., assignor to the Hartford Rubber Works Co., Hartford, Conn. Sectional mold and locking means therefor.

1,320,104—To Benedetto Tamburello, New York, N. Y. Demountable rim for tires.

1,320,121—To Ferdinand Francis Brucker, Akron, Ohio, assignor to the Miller Rubber Co., Akron, Ohio. Method of making tires.

1,320,128—To Benjamin J. Felix, Chicago, Ill. Rubber-mixing machine.

1,320,166—To Iwan Ostromislensky, Petrograd, Russia, assignor by mesne assignments to New York Belting and Packing Co., New York, N. Y. Process for vulcanising rubber and products obtained thereby.

1,320,170—To Richard A. Penrose, Philadelphia, Pa. Detachable vehicle-wheel.

1,320,207—To Walter W. Colson, Jacksonville, Fla. Hose-supporter.

1,320,221—To Kinsuke Fukuda, Tokyo, Japan. Non-pneumatic rubber ball and process of manufacturing same.

1,320,283—To Benjamin A. Smith, Seattle, Wash. Tire-armor.

1,320,295—To William C. Tyler, Racine, Wis., assignor to the Goodyear Tire and Rubber Co., Akron, Ohio. Tire-mold.

1,320,399—To William C. Lipe and Arthur G. Bolster, Syracuse, N. Y., assignors to Fisk Rubber Co., Chicopee Falls, Mass. Tire-mold.

1,320,401—To George A. Lunz, Buffalo, N. Y. Non-skidding attachment for vexhicle-wheels.

1,320,404—To Thomas Mohn and Albert Mohn, Red Wing, Minn. Automobile-rim.

1,320,411—To Joseph P. Payette, Centralia, Wash. Tire-chain.

1,320,416—To Andrew C. Saxe, Waterbury, and John L. Saxe, Winsted, Conn. Tire-mender.

1,320,417—To George C. Seymour, New York, N. Y. Heel.

1,320,518—To Ottavio Zancan, New York, N. Y. Vehicle-tire.

1,320,597—To James B. Atkins, Akron, Ohio., assignor to Goodyear Tire and Rubber Co., Akron, Ohio. Vehicle-wheel rim.

1,320,641—To Robert E. McCain, Chicago, Ill. Garment-supporter.

1,320,667—To John Adams, Youngstown, Ohio. Non-skid device.

1,320,694—To Edward S. Keene, Agricultural College, N. D. Lettering-pen.

1,320,708—To Mendel Pianko, Chicago, Ill. Tire-liner.

1,320,728—To Gifford E. Blaylock, Baltimore, Md. Tire-tread stripper.

1,320,737—To Arron R. Chisholm, New York, N. Y. Suspensory-bandage.

1,320,769—To Royal B. Lee, San Diego, Calif. Tire-holding device.

1,320,829—To William C. Bohne, Philadelphia, Pa. Tire-applying and removing device.

1,320,886—To John Michel, Philadelphia, Pa. Anti-skid device.

1,320,909—To Louis H. Perlman, New York, N. Y. Wheel.

MARKETS

Manufactured Rubber Goods

NEW YORK, November 10, 1919.

Business in the rubber industry is exceptional and conditions are reported to be excellent throughout the country. Rubber manufacturers, as a class, are having but little labor trouble and this factor alone is helping to keep business steady.

Export trading in all lines of rubber products is being held up for the time being by the unfavorable position of the exchange market but well informed business men believe that this situation will improve in the near future. It is understood that a group of powerful bankers have taken up the question and have decided to make an attempt to stabilize the situation by the granting of credits to would-be buyers in the American market. It is believed, however, that this action is contingent upon the ratification of the peace treaty.

DRUGGISTS' SUNDRIES

A good business is druggists' sundries is reported with the advent of winter weather. Druggists are said to be placing fair orders for many winter lines and hot water bottles and rubber surgical appliances are meeting with a good sale. Preparations are being made by manufacturers for next season's demands for rubber goods, such as bathing caps, shoes, etc.

MECHANICAL GOODS

Trading in this market is somewhat hampered with operations being greatly curtailed in many industries because of the general labor unrest. A fair demand for rubber belting is reported, but it is believed that should labor troubles come to an end the demand for belting would swamp the market.

Mexico is reported to be in the market for fairly large quantities of rubber belting and railroad equipment, and some purchasing is being done through El Paso. Conditions in Mexico are too unsettled to permit of extensive purchasing at this time, however. The American railroads have not yet entered the market in a large way for couplings, brake linings, or other mechanicals. Large orders from this source are expected when the roads are finally forced into the market for materials.

AUTOMOBILE TIRES

No tire price changes have been reported since the recent changes announced by the Pennsylvania Rubber Co. There is a strong demand for rubber tires, and manufacturers of the leading makes report ever increasing sales of their products. Rubber plants are operating to capacity and a record production for 1919 is assured. Shortage of fabric is interfering somewhat with the output of manufacturers and raw materials are somewhat difficult to obtain, particularly as new companies have come into the field and added their requirements to those of the companies already established.

MISCELLANEOUS PRODUCTS

Huge quantities of rubber are going into rubber footwear and this branch of the business is being constantly widened in scope. The development of the market for rubber heels constantly increases, as heavy demand testifies. Dealers in rubber heels report that they experience considerable difficulty in getting sufficient supplies from the manufacturers to fill the consumer demand.

Rubber soles are also coming to the fore as the prices for leather constantly rise. The large rubber companies engaged in the manufacture of "composition soles" report a good business. Some of the larger companies are also turning out rubber soled and heeled shoes as well as sport shoes which they intend to feature extensively next summer.

With the approach of winter weather heavy orders for rubbers and boots are reaching manufacturers and jobbers. Government competition has not been as disastrous as had been expected, many prospective buyers shying at the uniform cut of the articles.

Demand for rubber jar rings is practically at an end as nearly all preserving is being stopped by the sugar shortage. Washers and gaskets are meeting with a good demand.

Cottons, Yarns, and Fabric

NEW YORK, November 10, 1919.

A strong demand for high grade cottons, coupled with an extreme scarcity of these grades, has sent the market to new high levels for shipment during November and December, the market going to over 38 cents during trading the early part of the month. In addition, marked activity in the Southern spot markets has been reported with buyers paying as high as 41 cents per pound to get high grade cotton for prompt shipment. As high as 75 cents has been paid for some grades of particularly desirable stock.

Despite the generally unsettled condition of the country, due partly to the agitation in labor circles, buying and consumption of cotton has been steady during the fortnight. A special report, issued by the Department of Agriculture on November 2, placed the condition of the crop at a trifle over 51 per cent, as against 54.4 per cent, the last report issued at the end of September.

According to reports received from the South there is a preponderance of low grade cotton held over from last year and the top grade staple held over from last season is held at extremely fancy prices. Southern reports state that while cotton prices look high at the present time, the unusual conditions for delivery up to January will prevent any serious break in the market up to the turn of the year, at least.

Export buying in spots is reported as being very active, with exporters showing but little interest in futures. Foreign buyers operating in the South are paying 40-41 cents per pound for cotton for immediate shipment. England is buying in fair quantities while other European nations are coming in for larger supplies. Japan is buying in heavy volume.

EGYPTIAN COTTON

A report on the condition of the Egyptian cotton crop places the condition of the crop at 91 per cent for lower Egypt against 85 in July; 96 per cent for Middle Egypt, against 97 per cent, and 90 per cent for Upper Egypt, against 99 per cent. First pickings of the Egyptian crop are reported to be of fine quality, and a fairly heavy yield is looked for. There is a good demand for the Egyptian long staple reported in the American market but arrivals are not large enough to take care of the demand.

SEA ISLAND COTTON

The new crop of Sea Island is in poor shape and a small yield is forecasted. Some attention is being given by growers to the possibilities of Meade cotton, the new substitute for Sea Island evolved by the Department of Agriculture. A good consuming demand for Sea Island exists at the present time but stocks are totally inadequate. The War Department recently sold more than 9,000 bales of Sea Island and Egyptian and American-Egyptian cotton.

AMERICAN-EGYPTIAN COTTON

There is a strong demand for American-Egyptian cotton reported. The market holds firm and tire manufacturers are showing considerable interest in the new crop. Expansion of the industry in the Southwest is reported to be steadily on the increase.

TIRE FABRICS

A continued steady consuming demand for tire fabrics is reported and the market is firmly held on the quoted basis. Manufacturers of the fabric continue to be hampered in their production by a shortage of suitable cotton, but indications are that this difficulty will shortly be overcome. Many plants are operating to capacity to keep tire manufacturing companies supplied with fabrics.

HOSE AND BELTING FABRICS

The demand for fabrics continues quiet and the market is unchanged. Some business is being done in ducks but on the whole, business is not as active as producers and dealers would like to see it.

DRILLS, SHEETINGS AND OSNABURGS

There is a fairly good demand for drills and sheetings reported and the market is showing a stronger tone. Buying from the rubber industry continues active, as tire manufacturers are working their plants at capacity. The Government is expected to dispose of large quantities of these materials within the next few weeks. A good demand for osnaburgs is reported and there is but little change in the market.

BURLAPS

There is a continued good demand for spot burlaps, and the market is showing a steady undertone. Cable difficulties are keeping the market somewhat unsettled, as many cables are taking several days to get through and arrive in bad condition. Demand for burlaps from the automobile trade is reported to be holding steady but demand from other sources is less than usual.

TIRE FABRICS

17¼-ounce	Sea Island, combed, sq. yd.	1.40@1.55
17¼-ounce	Egyptian, combed	1.20@1.30
17¼-ounce	Egyptian, carded	Nominal
17¼-ounce	Peelers, carded	.85@ .90
17¼-ounce	Peelers, combed	1.05@1.15

DUCKS

Single Filling (pound basis)	lb.	Nominal
Double Filling (pound basis)		Nominal

DRILLS

37-inch	2.35-yard	yd.	.32 @ .....
37-inch	2.75-yard		.27 @ .27½
37-inch	3.00-yard		.26 @ .....
37-inch	3.25-yard		.24 @ .....
37-inch	3.50-yard		.23 @ .....
37-inch	3.95-yard		.21 @ .....
37-inch	2.00-yard Southern		Nominal
37-inch	2.00-yard Northern		Nominal
40-inch	2.40-yard Southern		Nominal
40-inch	2.40-yard Northern		Nominal
52-inch	1.90-yard Southern		Nominal
52-inch	1.90-yard Northern		Nominal

SHEETINGS

40-inch	2.35-yard	yd.	....@ .....
40-inch	2.50-yard		.29 @ .30
40-inch	2.85-yard		.26½ @ .27
40-inch	3.00-yard		.27 @ .....
40-inch	3.25-yard		.25 @ .25½
40-inch	3.75-yard		.20 @ .20½
40-inch	3.60-yard		.24 @ .....
40-inch	4.25-yard		.18½ @ .19

Note.—In view of the unsettled conditions prevailing in the market at the present time, the prices quoted above are more or less nominal, and are not guaranteed.

BURLAPS
(Carload lots)

		Cents Per Yard
7 -ounce	40-inch	Nominal
7½-ounce	40-inch	Nominal
7½-ounce	45-inch	Nominal
8 -ounce	36-inch	Nominal
8 -ounce	40-inch	13.75@ 14.00
8½-ounce	40-inch	....@ .....
10 -ounce	36-inch	....@ .....
10 -ounce	36-inch	17.35@ 17.50
10 -ounce	45-inch	Nominal
10½-ounce	40-inch	17.75@ 18.00

WAXES

A better demand for waxes is reported, and the market is displaying a firmer tone. Beeswax is unchanged but the market is stronger and a good demand is reported. Carnauba wax is firmer under a heavy consuming demand. Japan wax is considerably firmer as most of the weak holders have been well cleared from the market. Revised quotations are given below.

OILS

Firmness continues to rule in the market for oils. Linseed oil is meeting with a good consuming demand, and offerings are small, with most producers booked well ahead with spot linseed oil a thing of the past. Corn oil was generally quiet, although an easier undercurrent was reported in sympathy with the easier market on the raw materials. The market for rosin oil and turpentine held generally firm.

Chemicals and Compounding Materials

NEW YORK, November 10, 1919.

The market for chemicals is steady and the same may be said in respect to the market for compounding materials. A good demand for most items in the list is reported from the domestic trade the tire manufacturers in particular being reported as fairly heavy buyers of the articles used in the industry. Labor troubles in some lines are holding up production, but generally speaking, the industry is working hard to keep production on a parity with the demand.

Exports are showing but slight animation as the exchange rates hamper trading. England, however, has come into the market for considerable quantities of compounding materials, and the end of the strike of the longshoremen is now permitting the shipment abroad of orders which have been held in New York for more than a month.

BENZOL

There is a stronger market reported on benzol, prices being quoted up to 34 to 35 cents per gallon for pure in bulk. There is a steady demand reported by producers, the tire industry taking fair quantities. Development of benzol as a motor fuel is increasing the demand, and at the same time is making for a stronger market.

LITHARGE

The market remains unchanged on the basis of 9¾ to 10½ cents per pound on litharge. Producers are reported sold far ahead, and the output of the leading producers is booked clear up until the first of January. Demand is constantly on the increase and the receipt of some shipments of foreign would probably be welcomed by consumers.

LITHOPONE

The market price of lithopone continues firmly held on the basis of 7 cents per pound, although producers could undoubtedly get more should they care to boost the market. Demand is unusually strong, and producers are now booking business for shipment during the latter part of January and early in February, the output being contracted for up to the middle of January.

WHITING

Producers are behind on their orders for whiting, due principally to the shutting off of imports from England occasioned by the strike of the longshoremen. It is hoped to get consignments now in port off the steamers within a few days, however. The market is firmly held on the basis of $1.15 to $1.20 for commercial, and $1.50 to $1.75 per cwt. for American paris white. There is a strong consuming demand reported.

ORANGE MINERAL

There is a continued strong demand for orange mineral, and producers are unable to begin to make production meet the demand. Prices are firmly maintained on the basis of 13¼ to 13¾ cents per pound.

BARYTES

Prices on barytes continue unchanged on the basis of $21 to $21.50 per ton, f.o.b. mills, but demand is exceeding production. Producers of barytes are experiencing difficulty in getting enough help to keep their output up to standard, although they are endeavoring to work their mills to capacity. Lithopone manufacturers are in the market for all of the barytes they can obtain. Some German barytes are reported to have gone into consuming channels, and further importations would help to relieve the shortage now existing. German producers, however, do not seem to be planning any determined campaign to recapture the American market.

GLUES

There is a good demand for glues reported and the market is showing a strong undertone. Producers are unable to fill all of the orders offered promptly, but are doing their utmost to keep shipments going out on time. The market is held firm at 35 to 44 cents for extra white; 30 to 35 cents for medium white; 25 to 36 cents for cabinet; 20 to 25 cents for low grade cabinet; 13 to 18 cents for foot stock; 12 to 16 cents for brown food stock; and, 10 to 15 cents for common bone.

Prices Current for Chemicals, Fillers, Colors, etc.

Acetone, car lots	lb.	.13½ @	.14
Smaller lots	lb.	.15 @	.16
Accelerator, in drums	lb.	.85 @	1.00
Acids, Acetic, 56%	cwt.	6.00 @	6.50
Carbolic, C. P	lb.	.12 @	.13
Muriatic, 20 deg.	cwt.	2.00 @	2.25
Muriatic, 22 deg.	cwt.	2.50 @	2.75
Nitric, 42 deg.	cwt.	7.00 @	8.00
Nitric, 40 deg.	cwt.	6.75 @	7.50
Sulphuric, 60 deg.	ton	17.00 @	18.00
Tartaric, crystals	lb.	.79½ @	—
Aluminum Flake	ton	29.00 @	31.00
Aniline oil, bulk basis, Contract		— @	—
Imported		Nominal	
Domestic		.32 @	.33
Antimony, metal spot	lb.	— @	—
Oxide	lb.	.09½ @	.11
Sulphuret, red	lb.	.25 @	.30
Sulphuret, golden	lb.	.30 @	.35
Sulphuret, crimson	lb.	.48 @	.50
Needle, powdered	lb.	.09 @	.10
Asbestos	ton	35.00 @	45.00
Asphaltum, Egyptian	lb.	.16 @	.20
Domestic	ton	22.00 @	30.00
Barium sulphate, technical	lb.	.04½ @	.05
Sulphide	lb.	.07¼ @	.07½
Barytes, prime white imported	ton	Nominal	
white, domestic	lb.	.30 @	.31
off color, domestic	lb.	.21 @	.24
Southern, f.o.b. mills		21.00 @	—
Western, f.o.b. mills		21.50 @	—
Benzol, pure, bulk	gal.	.34 @	.36
Beta-naphtol, sublimed	lb.	.55 @	.65
unsublimed	lb.	.50 @	.62
Blacks, Drop	lb.	.05½ @	.15
Ivory	lb.	.16 @	.30
Carbon, gas, cases	lb.	.12 @	.25
Lampblack, R. M.	lb.	.15 @	.45
Mineral blacks	ton	35.00 @	45.00
Blues, Prussian	lb.	.70 @	.75
Soluble	lb.	.70 @	.80
Ultramarine	lb.	.70 @	.80
Browns, Umber, Turkey, burnt, powdered	lb.	.05 @	.06½
American, burnt	lb.	.03½ @	.04
Cadmium sulphide, yellow	lb.	1.50 @	1.75
Carbon, disulphide, bulk	lb.	.06 @	—
tetrachloride drums	lb.	.11 @	—
Caustic Soda, 76@78%	cwt.	3.25 @	3.50
Chalk, precipitated, extra light	lb.	.05½ @	.06½
light	lb.	.05 @	.06
heavy	lb.	.05½ @	.06
China clay, domestic	ton	8.50 @	20.00
imported	ton	18.00 @	23.50
Fossil flour	lb.	.03¾ @	.05
Gilsonite	ton	47.50 @	60.00
Glue, extra white	lb.	.35 @	.40
medium	lb.	.30 @	.35
low grade		.20 @	.25
foot stock		.13 @	.18
brown foots		.12 @	.16
common bone		.11 @	.15

Glycerine, C. P. (drums)	lb.	.21 @	.21½
cans		.23 @	.23½
second hands		— @	—
Graphite, flake (bbl.)	lb.	.14 @	.25
powdered (bbl.)	lb.	.05 @	.10
Green, chrome, R. M.	lb.	.35 @	.40
Ground glass (fine)	lb.	.03½ @	.04
Hexamethylene	lb.	.90 @	1.00
Infusorial earth, powd'd.	lb.	.02 @	.035
bolted	lb.	.035 @	—
Iron oxide, red, reduced grades	lb.	.07 @	.08
red, pure, bright	lb.	.15 @	.20
Lead, red, dry (casks)	lb.	.10¼ @	.10½
sublimed	lb.	.09¼ @	.09¾
white, basic carb.	lb.	.09 @	.09½
white, basic sulp.	lb.	.08¼ @	.08½
Lime flour	lb.	.01¾ @	.02
Litharge (casks)	lb.	.09¾ @	.10½
English		*.12 @	.13
Lithopone, domestic, bbls.	lb.	.07 @	—
in bags	lb.	.06¾ @	—
Magnesia, carbonate	lb.	.12½ @	.13½
calcined light	lb.	.65 @	.75
Magnesite, calcined, pwd.	ton	50.00 @	65.00
Mica, powdered	lb.	.04¾ @	.05
Naphtha, motor gasoline, (steel bbls.)	gal.	.23½ @	—
68 @ 70 degrees (steel bbls.)	gal.	.30½ @	—
70 @ 72 degrees (steel bbls.)	gal.	.31½ @	—
73 @ 76 degrees (steel bbls.)	gal.	.33½ @	—
machine (wood bbls.)	gal.	.36½ @	—
Oil corn, crude factory	lb.	.23½ @	—
corn, refined (bbls.)	lb.	.24 @	—
linseed (bbls.) Nov.-Dec.		1.75 @	—
in carloads, spot		1.72 @	—
tank cars		1.67 @	—
Oil palm, Lagos	lb.	.17½ @	—
Niger		.16¾ @	—
pine, yellow	gal.	.87 @	—
rapeseed, refined	gal.	1.45 @	—
rapeseed, blown	gal.	1.60 @	—
rosin, first rectified.	gal.	.91 @	—
second run		.92 @	—
tar (commercial)	gal.	.36 @	.38
Orange mineral, American.	lb.	.13¼ @	.14¼
imported	lb.	.15 @	.20
Paraphenylenediamine	lb.	2.90 @	3.40
Petrolatum, bbls., amber.	lb.	.07½ @	.08
pale yellow	lb.	.06 @	.07
Pine tar kiln	bbl.	12.00 @	12.50
Pitch	bbl.	8.00 @	8.25
Plaster of paris	bbl.	2.00 @	3.00
Red Tuscan	lb.	.22 @	.30
red (American)	lb.	.14 @	.16
Indian (English)	lb.	.14 @	.16
Standard	lb.	.12 @	.16
Rosin (common to good)— 280 lbs.	bbl.	16.50 @	—
Rotten stone, powdered.	lb.	.02½ @	.04½
Rubber, substitute, black.	lb.	.13 @	.17
white	lb.	.15 @	.24
brown	lb.	.20 @	.25
Shellac, fine orange	lb.	— @	—
T. N.	lb.	1.05 @	1.10
Bleached ordinary	lb.	1.10 @	1.20
Bleached bonedry	lb.	1.30 @	1.40
Silex (silica)	ton	22.00 @	40.00
Soapstone, powdered	ton	12.00 @	17.50
Starch, corn, powd.	cwt.	5.62 @	—
pearl		5.37 @	—
Jap. potato	lb.	.09⅝ @	.09⅝
Sulphur, crude	ton	*50.00 @	—
100 pounds		3.20 @	4.25
roll		2.70 @	3.15
commercial superfine		2.50 @	—
Talc, American	ton	20.00 @	40.00
French	ton	*30.00 @	35.00
Toluol, pure, in drums.	gal.	.25 @	.30
commercial		.22 @	.27
Tripolite earth	lb.	.01⅛ @	—
Turpentine, pure gum— spirit	gal.	1.70 @	—
wood	gal.	1.45 @	—
Venice, artificial	gal.	.14 @	.15
true		4.50 @	—
Vermilion, English	lb.	1.60 @	1.65
American		.25 @	.30
Wax, beeswax, crude yel.	lb.	.44 @	.45
refined		.47 @	.48
Bayberry		.50 @	.55
ceresin, white	lb.	.16 @	.17
yellow		.14 @	.15

* Boiled, 5 barrels or more, 2c. extra. Double boiled, 5 barrels or more, 3c. extra.

Crude Rubber

NEW YORK, November 10, 1919.

Continued strength features the market for crude rubber, and there is a good demand for all grades on the spot. The strike of longshoremen has held up many consignments of the crude, and consumers have been paying premiums to obtain immediate delivery of spot stocks. Considerable speculation is reported, dealers declaring that many delivery receipts often bear the indorsements of twenty or more sellers before they reach importers.

Reports from London and Singapore are bullish, a strong and advancing market being reported from both these places. Smoked sheets ribbed are quoted at 54 cents per pound in both these markets, against a price of 54 to 55 cents per pound here. Many factors in the market are freely predicting a higher market within the near future, with demand from consuming sources constantly on the increase.

	Cents per pound.		
Para-Up-river fine	52	@	52½
Up-river medium	51	@	51½
Up-river coarse	35	@	....
Caucho ball	35	@	35½
Islands fine	48	@	....
Islands coarse	21½	@	22
Cameta	22½	@	23
Madeira fine	62	@	....
Knapsack	73	@	....
Ceylons—Smoked sheets, ribbed	54	@	55
Smoked sheets, plain	53	@	54
First latex pale crepe	55	@	56
Amber crepe	Nominal.		
Clean brown crepe	54	@	....
Rio Nunez string	55	@	....
Palembang	14	@	....
African	33	@	....
Prime Surinam sheets	1.02	@	....
Centrals—Corinto prime	35	@	....
Esmeralda, prime	35	@	....
*Balato sheets	1.00	@	....
Guavule, wet	35	@	....
Balata, block, Panama	57	@	....

* Nominal.

Scrap Rubber

NEW YORK, November 10, 1919.

A fair buying of scrap rubber is reported, and the market is showing a generally firm undercurrent. Strength in the market for crude is being reflected somewhat in a stronger tone in the market for scrap. Boots and shoes and trimmed arctics hold generally unchanged under a quiet demand. Bicycle tires and inner tubes are meeting with a fair routine inquiry.

	Cents per pound.		
Boots and shoes	8.25	@	8.50
Arctics, trimmed	6.00	@	6.50
Arctics, untrimmed	4.75	@	5.25
Tires—Automobile	4.00	@	4.50
Bicycles, pneumatic	2.50	@	3.00
Mixed hose	1.25	@	1.75
Air brake	2.75	@	3.00
Inner tubes, No. 1	20.00	@	21.00
Inner tubes, No. 2	10.00	@	11.00
Red tubes	9.50	@	10.00

Belden Issues Booklet

The Belden Manufacturing Company, of Chicago, Ill., has recently issued a booklet describing material, terms and conditions governing quotations, orders and production of molds and molded pieces. This firm purchases the molding mixtures or compounds manufactured by the Condensite Company of America, the General Bakelite Company and the Redmanol Chemical Products Company, and sells the pieces molded from these materials as "Beldenmold." The booklet is well printed on an excellent quality of paper, has an attractive cover and contains eight pages of illustrations.

Akron Stock Quotations

(*Special Akron Correspondence.*)

The rapid advances of rubber shares continues to be the outstanding feature of the Akron stock market.

Goodrich and Kelly-Springfield common have hit new high marks this week, Goodrich selling up to 92 and Kelly over 160. Further advances are expected in financial circles. Firestone also is drawing attention, sales at 200 being reported and holders asking 205. Goodyear has climbed to 430 and has remained at that point for a week. Other issues are fairly steady.

A recent New York dispatch says that Goodrich has long been out of line with other tire stocks, but there seems to be indications that a change is near. A large block of stock owned by members of the Goodrich family has been in the process of liquidation for some time past. Knowledge that this stock has been hanging over the market has prevented operations for a rise. It is now said, however, that this liquidation has been completed and that the stock sold has passed into the hands of certain Detroit people who are close to the General Motors concern.

Quotations on November 10 were as follows:

	Bid	Asked
Amer. R. — T., com	59	..
do pfd	105	..
Amazon Rubber	100	105
Firestone, com	199	205
do, pfd	98	99
General, com	500	..
do, pfd	101	..
*Goodrich, com	85	87
do pfd	104	104½
Goodyear, com	425	430
do, 1st pfd	111	112
India Rubber	210	220
Kelly-Springfield	152	154
Mason, com	25	..
do, pfd	..	82
Marathon, com	..	55
Miller, com	225	230
do, 1st pfd	103	104
*do 2d pfd	102½	105
Mohawk, com	320	..
do, pfd	100	110
*Portage, com	126	131
do, pfd	94	96
Republic, com	6¾	7¼
do, 1st pfd	..	95
do, 2d pfd	..	94
Rubber Products	134	138
Star Rub, com	350	450
do, pfd	97	99
Swinehart, com	98	100
do, pfd	90	..
Phoenix Rubber	22	..
Standard Tire	225	..

* Ex-dividend.

New Lincoln Highway Branch

The location of the big Goodyear plant at Los Angeles, Calif., has greatly stimulated interest in the establishment of a branch of the Lincoln Highway leading from Ely, Nev., to Los Angeles, a distance of 770 miles. Ely is the first big town reached after crossing the great desert section of the Great Salt Lake country. F. A. Seiberling, president of the Lincoln Highway and of The Goodyear Tire & Rubber Company, considers Los Angeles a logical terminus of the great transcontinental highway and suggests that the new spur of this highway should run to Oasis by way of Tonopah and Goldfield, then through the Owens river and Antelope Valleys to Los Angeles. This would mean 500 miles in California and 270 in Nevada. The Automobile Club of Southern California has already signposted the entire route and with the backing of this organization and that of the Lincoln Highway association, it is expected that both the states of Nevada and California will construct their portions of the Ely-Los Angeles highway.

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Drug and Chemical Department

National Aniline and Chemical Company, Inc.

Main Sales Office

21 Burling Slip, New York

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IMPORTERS

Crude Rubber

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